This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

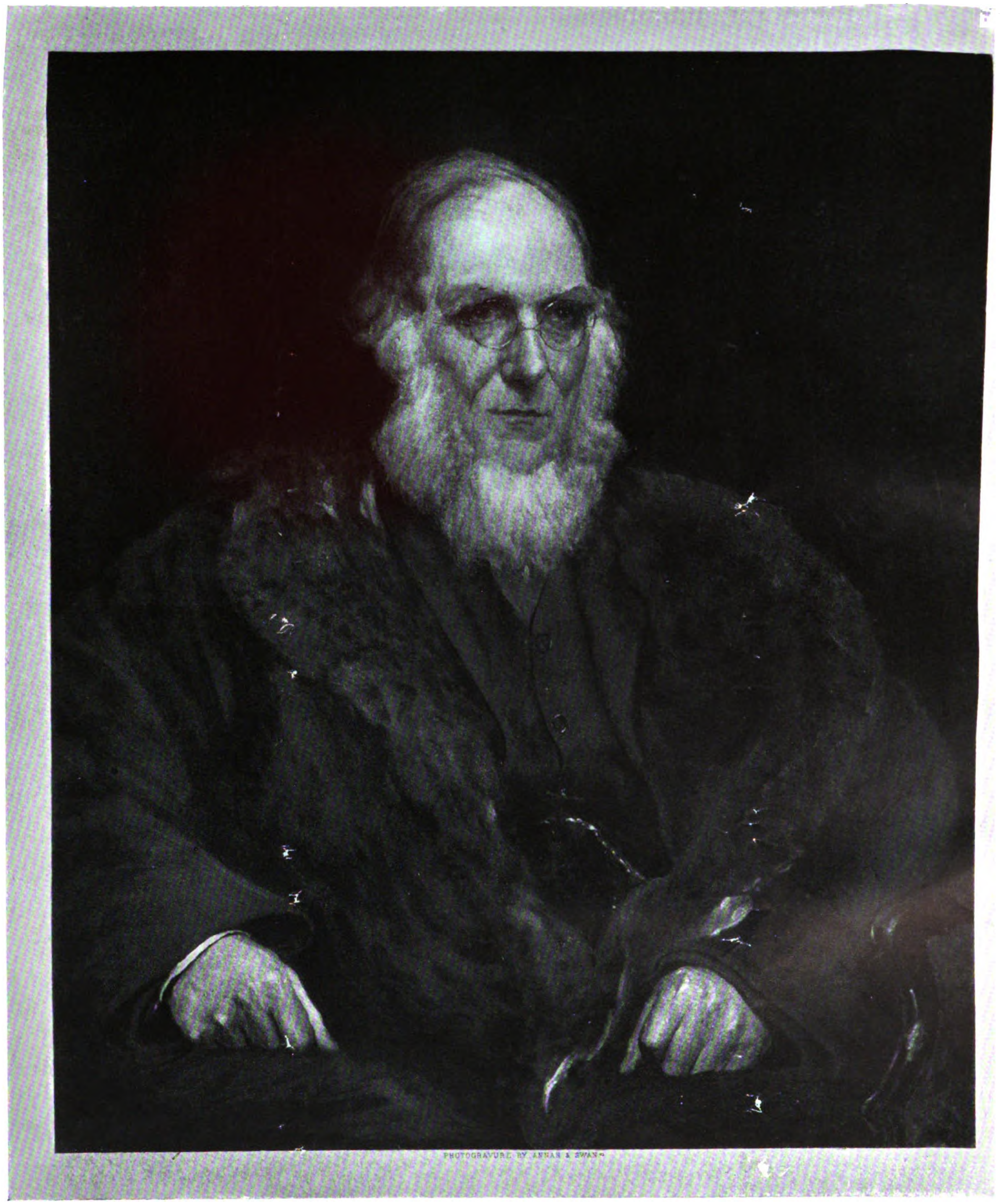
About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

Pen BI
8

HARVARD UNIVERSITY
ARNOLD ARBORETUM
PRESENTED BY CHARLES SPRAGUE SARGENT
1892

Supplement to the "Gardeners' Chronicle."



PHOTOGRAVURE BY ANNAN & SWAN.

SIR JOSEPH DALTON HOOKER, G.C.S.I., C.B., F.R.S., F.L.S., &C., LATE DIRECTOR OF THE ROYAL GARDENS, KEW.

[*From the Painting by Hubert Herkomer, R.A., in the possession of the Linnean Society.*

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge.

THE
GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(*ESTABLISHED IN* 1841.)

VOL. XXXVII.—THIRD SERIES.

JANUARY TO JUNE, 1905.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
1905.

7.23.74
60,685

BRADBURY, AGNEW AND CO., LTD., PRINTERS,
LONDON AND TONBRIDGE.

INDEX OF CONTENTS.

JANUARY TO JUNE, 1905.

(For Special Headings see under Books; Certificates; Law Notes; Nursery Notes; Obituary; Plant Portraits; Plants New; Scientific Committee; Societies; and Illustrations.)

A

Abelia uniflora, 323
Aberdeen Agricultural College, lectures at, 104
Acacia dealbata, planting, 218
Academy, pictures at the Royal, 273
Adonis amurensis, 188; A. davurica in Japan, 10
Afforestation in Wales, 90
Africa, German South-west, 248
Agapetes macrantha, 375
Agaricus personatus, fasciation in, 342
Agave americana causing skin irritation, 156; flowering at Parkfield, Worcester, 37
Agriculture, Board of, activity of the, 248
Almond flowering, the, 153
Alpine garden, the, 35, 97, 148, 189, 197, 261
Alpine plants in pots, 245
Alternaria solani (Tomato disease), 92
American Carnation Society, the, 121
American gardening paper, a new, 9; Society for Horticultural Science, 63; State horticulture, 154
Anemone Hepatica "Torch," 261; A. nemorosa, a double-flowered form of, 307; A., the genus, 10
Angiopteris evecta var. Teysmanniana in Brussels Botanic Gardens, 329
Angræcum distichum flowering at Burford, 45
Ansellia africana flowering in Kew Gardens, 261
Anthonomus quadrigibbus (Apple curculio), 372
Ants as gardeners, 379
Aphis, the giant Willow, 243
Apiary, the, 91, 103, 119, 135, 187, 218, 251, 285, 327, 359, 377
Apple-stocks raised from cuttings, 202, 284
Apples Annie Elizabeth, 6; Blenheim Pippin, 115; Cornish Gilliflower, 6; Fenn's Wonder, 57; Lady Henniker, 115, 138; Lane's Prince Albert, 44, 76, 90; Lord Burghley, 148, 202, 235; Lord Stradbroke, 57; The Spice, 156; The Hermanns, 182; Tower of Glamis, 69; Wyken Pippin, 45
Apples, census of varieties of, 26, 28, 44, 58; colour in, 12; from the Cape, 232, 284; late culinary, 116; orchard culture of, 90; seedless, 121, 281, 313; some lesser-known varieties of, 148; special manures and soils for, 68; the flavour of some varieties of, 124; the storage of, 156; thinning, 368
Arabis alpina with double flowers and variegated foliage, 198; A. Ferdinandi-Coburgi, 35
Araucaria at Dropmore, last of the famous, 59
Arboriculture in Scotland, 396
Arddarroch, Odontoglossums at, 19
Ardwell, Wigtonshire, Conifers at, 219
Arenaria montana, 375
Armstrong College, the, 248
Arnold Arboretum, the, 58
Arnott, Mr. S., presentation to, 249
Arundinaria nobilis, 139
Ashton, a curious custom at, 282
Asparagus cultivation in Germany, 336; at Evesham, 345; A. Sprengeri, 10, 28
Asters, China, 277
Auricula, the, 38, 266
Auriculas, some new green-edged "show," 250; the culture of, 276
Austria and Germany, gardening in, 305
Awards of the Royal Horticultural Society, 328, 345, 384
Azalea indica "Hexe," 185
Azaleas, grafting, 122; cultivation of, in Dresden, 379

B

Baissea gracillima as a source of rubber, 153
Bamboo, uses of, in the garden, 165
Bamboo garden-seat, a, 293
Banana industry, the Barbados, 372
Bananas, a lecture on, 205
Bananas injured in transit by children, 169
Bank House, Accrington, Orchids at, 355
Barbados, the Banana industry in the, 372
Barnham, fruit-growing industry at, 396
Bauhin's, Gaspard, herbarium, 9
Bay-trees, trained, 251
Bedding, summer, 330
Beech-coccus, remedy for the, 185, 192
Begonia Gloire de Lorraine in South Africa, 372
Belvedere, St. Lawrence, Isle of Wight, the gardens at, 181
Belvoir Castle, spring flowers at, 233
Benary, Ernest (*Vegetables Photographed from Nature*), 169
Benevolent Institution, Gardeners' Royal, 25, 28, 42, (annual meeting) 56, 63, 73, 78, 89, (annual dinner) 395
Bequest, a monetary, to the Royal Horticultural Society, 200
Berlin Botanical Garden, 360
Bermuda-grown Onions, 316
Biologists, economic, the association of, 298
Biology of Melampyrum, the, 379
"Black-stripe" disease in Tomatos, 201
Blechnum spicant, a variegated form of, 307
Board of Agriculture's leaflets, 28

Books, Notices of:—A Gardener's Year (*H. Rider Haggard*), 52; Alpenflora (*Dr. Gustav Hegi and Dr. Gustav Dunzinger*), 379; American Nut Journal, 377; Annuals (*T. W. Sanders*), 361; Another Hardy Garden Book (*Helena Rutherfurd*), 380; Author and Printer (*F. Howard Collins*), 391; Bee-hives and Bee-keepers' Appliances (*Paul N. Hasluck*), 118; Botanical Magazine, 9, 89, 170, 232, 298, 361; British Trees (*Rex Vicat Cole*), 379; Business Side of Agriculture (*Arthur G. Rogers*), 129; Cassell's Popular Gardening, 154, 232; Country Day by Day, (*E. Kay Robinson*), 83; Country Gentlemen's Estate-Book (*William Broomhall*), 340; Critical Revision of the Genus Eucalyptus (*J. H. Maiden*), 24, 372; Cultivation and Preparation of Para Rubber (*W. H. Johnson*), 249; Culture of Sweet Peas (*Richard Dean*), 288; Cunard Souvenir, 104; Dicks' London Street Guide, 218; Dictionnaire Iconographique des Orchidées, 42, 380; Die Orchideen und ihrer Cultur im Zimmer (*Von A. Braecklein*), 277; Familiar Wild Flowers (*F. E. Hulme*), 283; Farm and Home Year-Book for 1905, 263; Flora and Sylva, 104, 186, 297; Flora of the Punjab (*Drummond*), 41; Forest Flora of New South Wales (*J. H. Maiden*), 41, 150, 372; Forester's Pocket Diary and Note-Book (*A. D. Webster*), 4; Fruticetum Vilmorianum (*M. Maurice de Vilmorin*), 89; Garden Colour (*Margaret Waterfield*), 233, 374; Gardening Year-Book and Garden Oracle, 121; Gooseberry-Growers' Register for 1904, 169; Guide-Books received, 361; Harmsworth Encyclopædia, 201; Horticultural Directory, the, 185; Icones Plantarum, 89; Illustriertes Handbuch der Laubholzkunde (*Camillo Karl Scheider*), 169; Index Filicum (*Carl Christensen*), 330; Insect Life (*Fred. V. Theobald*), 279; Journal of Agricultural Science, the, 120; Journal of the Royal Horticultural Society, 137, 138, 156, 171, 189, 234; Journal of the Kew Guild, 8, 24; Kew Guides, 361; Landscape Gardening (*Samuel Parsons, jun.*), 3; Lehrbuch des Gartenbaues mit Besonderer Berucksichtigung Schweizericher Verhältnisse (*Von Max Löbner*), 291; L'Hybridation des Plantes (*Raphael de Noter*), 323; Manual of Forestry (*Dr. W. Schlich*), 169, 232; Manual of the Trees of North America (*Charles Sprague Sargent*), 307, 379; Monograph of Trees and Shrubs (*J. Woodward Manning*), 317; My Garden Diary (*Sutton & Sons*), 58; My New Zealand Garden (*A Suffolk Lady*), 201, 380; One-and-All Gardening Annual, 90; Orchid Review, the, 53; Pictorial Practical Tree and Shrub Culture (*W. P. Wright and W. Dallimore*), 249; Pigs for Profit (*John Walker*), 25; Poisonous Plants (*A. Bernard Smith*), 340; Publications Received, 76, 86, 122, 154, 217, 233, 249, 299, 313, 396; Ratepayers' Guide (*Goddard*), 42; Répertoire de Couleurs pour aider à la détermination des Couleurs des Fleurs des Feuillages et des Fruits (*M. Henri Dauthénay*), 312; Species and Varieties, their Origin by Mutation (*Hugo de Vries*), 321; Sweet Pea Annual, 89; Thalacker's Adressbuch und Kalender, 42; The Antiquary, 24; The Book of the Lily (*William Goldring*), 157; The Book of the Potato (*T. W. Sanders*), 212; The Book of the Rose (*Rev. A. Foster-Melliar*), 101; Book of Topiary, the (*C. H. Curtis and Gibson*), 26; The Culture of Fruit Trees in Pots (*J. Brace*), 45; The Garden Magazine, 121; The Municipal Parks, Gardens and Open Spaces of London (*Lt.-Col. Sexby*), 396; The Rational Almanac, 313; The Tropical Agriculturist, 201, 275; Timber Trades Journal, 201; Variation of Animals and Plants under Domestication (*Chas. Darwin*), 154; Vegetables and their Culture (*T. W. Sanders*), 117; Vegetables Photographed from Nature (*Ernest Benary*), 169; Willing's Press Guide, 9; Year Book of New South Wales, 150
Borassus flabelliformis with branches, 263
Bordeaux-Mixture, how to make, 288
Botanical Congress at Vienna, 153, 378
Bougainvillea spectabilis in America, 168
Brace, J. (*The Culture of Fruit Trees in Pots*), 45
Brassia brachiata, 245
Briscoe, Mr. T. W., appointment of, 248
British Columbia, fruit-growing in, 141, 154
Brunfelsia calycina var. macrantha, 130
Brussels Botanic Gardens, 91
Bud variation, lecture on, 174
Building Trades Exhibition, 281
Buitenzorg Botanic Gardens, reorganisation of, 217
Bulb garden, the, 275, 340
Bulb-mite, the, 185
Burford, Orchids at, 116, 146

C

Cabbage, Sutton's April, 330; the Chinese, 325
Cabbages, bolting, 354; early, 137
Caladium-culture, 149
Calandrinias as garden plants, 386
Calla, "Soft-rot" disease in, 9
Calodendron capense in the Botanic Garden, Sydney, 293
Camellia-tree destroyed by fire, 25
Camellias, 218; at Leyswood, 57; in the open, 202.
Campanula garganica hirsuta, 97; C. glomerata with a short peduncle, 199; C. persicifolia in France, 372
Cantua buxifolia, 189
Caoutchouc and Coffee, 153
Cape Colony, Apples from, 232, 284; horticulture in, 150
Carbolic acid as a remedy for Cercospora melonis, 235
Cardiff parks, presentation of plants to, 153
Carnations, Elizabeth, 284; Flamingo, 121; at Worth Park, Crawley, 13; in America, 121; Glacier and Mrs. S. J. Brooks, 13
Carpet-bed, a novel, 253
Carpolyza spiralis, 46
Castilloa rubber, 104
Castles at Walmer and Deal, 102
Catalpa "J. C. Teas," 381
Cattleya labiata first flowered by Sir W. Hooker, 9; C. labiata splendens, 53; C. Mossiæ Nalderiana, 390
Ceanothus thyrsiflorus, 178
Cedar of Goa, the, 219
Cedars, measurements of some large, 202
Cedrus Deodara var. alba spica, 44, 59, 76, 105
Cephalipterum Drummondi for millinery purposes, 154
Cercospora melonis ("spot" disease of Cucumbers), 13; alleged causes of, 284; carbolic acid as a cure for, 235
Ceropegia fusca, 373; C. Woodi, the fruit of, 244

Certificated Fruits and Vegetables.—Apple Fenn's Wonder, 16; Cucumber Delicacy, 333, 351; Peach Peregrine, 351; Pear Santa Claus, 16; Potato Syon House Prolific, 237; The Factor, 268; Rhubarb Hobday's Giant, 302

INDEX.

CERTIFICATED PLANTS. — Adonis amurensis, 172; Aërides Ortgiesianum, 16; Anthurium Scherzerianum burfordiense, 236; Aster sub-cœruleus, 397; Auricula Daffodil, 236; A. Favourite, 236; A. Rifleman, 301; A. Standard Bearer, 236; A. Vesta, 301; Begonia Madame Adeline Patti, 349; B. Madame Granby, 349; Bletia, hyacinthina alba (p. iii., Supp., June 3); Brassavola Perrini, 398; Brasso-Cattleya Digbyano-Schröderæ Tankervilliæ, 174; B.-C. × Digbyano-Trianæ Heaton variety, 174; B.-C. × Mrs. J. Leeman, 302; B.-C. × nivalis, 268; Bulbophyllum radiatum, 398; B. Reinwardtii, 302; Calanthe × Chapmani, 61; Cantua buxifolia, 172; Carnation Elizabeth, 267; C. Flamingo, 204; C. General Kuroki, 172; C. Harlowarden, 236; C. Lady Bountiful, 301; Carex Vilmorini, 107; Cattleya citrina maxima (p. ii., Supp., June 3); C. Mendeli Cicero (p. iii., Supp., June 3); C. M. Pittiæ, 398; C. × Octave Doin, 61; C. × Pittiæ, 333; C. Schilleriana Westfield variety (p. iii., Supp., June 3); C. Schröderæ alba var. "Madame Louis de Hemptinne," 268; C. Schröderæ "Robin," 268; Chrysanthemum Market Gold, 14; Cirrhopetalum guttatum, 398; Clematis montana rubens, 301, 332; Cœlogyne Lawrenceana, 205; C. speciosa alba, 205; Corydalis Wilsoni, 236; Cotoneaster pannosa, 60; Crinum Rattrayii, 204; Crocus chrysanthus var., 107; Crowea angustifolia, 204; Cymbidium rhodocheilum, 302; C. Sanderi, 108; Cypripedium × Alcibiades, 16; C. × aureum, 61; C. × Chas. Rickman var. magnifica, 174; C. × Dom Carlos "Rex," 333; C. × G. F. Moore, 61; C. × Haywoodianum, 174; C. × Honoriæ, 108; C. × Lawrebel, 61; C. × Leeanum J. Gurney Fowler, 61; C. × Leoniæ, 108; C. × Memoria Jerninghamiæ, 15; C. × San-Actæus, 61; C. × Westfieldiense, 16; Cyrtanthus angustifolius grandiflorus, 267; Dendrobium æmulum, 108; D. × Chessingtonense, 174; D. crumenatum, 302; D. cymbidioides, 108; D. × Elwesii, 174; D. fimbriatum oculatum Westonbirt variety, 237; D. × Haywoodiæ, 205; D. moniliforme, 205: D. Phalænopsis Chardwar variety, 16; D. triflorum, 16; D. × Venus Cookson's variety, 333; D. Wardianum candidum, 174; Edraianthus pumila, 349; Eremurus Elwesii albus. 349; Epidendrum × Boundii, 237; E. pterocarpum, 398; E. × radico-vitellinum, 398; Epi-Lælia × Sylvia, 302; E.-L. × vitellbrosa, 397; Erica mediterranea hybrida, 60; E. × Veitchii, 172; E. Willmoreana grandiflora, 204; Euphorbia Wulfeni, 301; Helleborus orientalis Stephen Olbrich, 172; Heloniopsis breviscapa, 172; Hemerocallis corona, 397; Impatiens Holsti, 397; Iris Neptune, 397; I. Persephone, 332; Lachenalia Brilliant, 140; L. Jean Rogers, 140; Lælia × Iona nigrescens, 141; Lælio-Cattleya × Charlesworthii magnifica, 61; L.-C. × G. S. Ball magnifica, 302; L.-C. × King of Spain, 398; Lobelia tenuior var. rosea, 332; Lycaste Skinneri atro-sanguinea, 174; L. S. alba var. magnifia, 141; Meconopsis integrifolia, 267; M. punicea, 301; Narcissus Alice Knight, 237; N. Banzai, 268; N. Cornelia, 268; N. Countess of Stamford, 268; N. Helen, Countess of Radnor, 268; N. King's Norton, 237; N. Lady of the Snows, 255; N. Leedsii Ariadne, 205; N. Lord Kitchener, 237; N. Marie Hall, 268; N. odorus rugulosus maximus, 255; N. Warleyensis, 255; N. Wm. Foster, 268; Odontoglossum × Adrianæ aureum, 205; O. × amabile, 174; O × a. var. "Ixion" (p. iii., Supp., June 3); O. × amœnum, Sander's variety, 237; O. × ardentissimum Doris, 205; O. × a. Lamus, 205; O. × a. Sybil, 205; O. crispum aureum, 302; O. c. Britain's Queen, 237; O. c. Louis L. Sander, 302; O. c. Prince Leopold, 205; O. c. Smeeanum, 268; O. c. "Titus," 302; O. × Lawrenceanum, 174; O. × L. Adonis (p. iii., Supp., June 3); O. liliflorum, 108; O. Lindleyanum aureum, 302; O. × loochristyense Arddarrock var., (p. iii., Supp., June 3); O. × l. Tracyanum, 141; O. × Lucasianum heatonense, 333; O. × mirificum, 61; O. ramosissimum Burford variety, 237; O. × Thompsonianum, 268; O. × Wiganianum, 237; Odontonia × Lairesseæ, 398; Oncidium O'Brienianum, 268; Pæony Her Grace, 398; P. La Fiancée, 398; Pelargonium (Ivy-leaved) Hon. Mrs. Boyle, 349; P. (Ivy-leaved) M. Rosaleur, 349; Phlox canadensis "Perry's variety," 349; Polystachya Haroldiana, 333; Primula × Arendi, 349; P. japonica var. pulverulenta, 301; P. sinensis "His Majesty," 107; P. tangutica, 301; P. Veitchii, 301; P. vittata, 332; Pteris cretica generosa, 301; Pulmonaria arvernensis alba, 172; Rhododendrons (Azaleas) Julius Koehrs, 349; R. Smithii aureum, 349; Rodgersia pinnata alba, 398; Rosa gigantea, 140; Roses David Harum, 349; Lady Gay, 349; Philadelphia Climber, 349; Prince de Bulgarie, 107; Sarracenia flava gigantea, 349; Sophro-Lælia × læta Orpetiana, 398; Streptocarpus Royal Purple, 398; Sweet Pea Henry Eckford, 398; Tulipa dasystemon, 268; T. Fosteriana, 268; Tulips Ariadne, 302; Clara Butt, 302; Claude Guillot, 302; Innocence, 333; King Harold, 302; Orange Beauty, 302; Quaintness, 333; Whistler, 333; Vanda Watsoni, 108; Verbena hybrida The King, 349; Zygopetalum × Ballii (p. iii., Supp., June 3); Z. × Crawshayanum, 333; Z. discolor atro-cœruleum, 237

Chamberlain, Mr. Joseph, and the British Gardeners' Association, 58; his garden at Highbury, 23
Channel Islands, produce from, 217
Charities, donations to the gardening, 42
Chelsea Physic Garden, the, 289
Cherries, flowering, 384
Cherry, the Chinese, 262
Chesfield, Hampton Wick, 396
China, plant-collecting in (E. H. Wilson), 113, 337, 356, 382
Chinese Cabbage, the, 325; Cherry, the, 262
Chlora longebracteata, 217
Christensen, Carl (*Index Filicum*), 330
Chrysanthemum grafting, 25
Chrysanthemum Mrs. Swinburne and its sport, 28, 44; C. Winter Cheer, 86
Chrysanthemums, Allman's Yellow, 86; an audit of, 14; early-flowering varieties of, 364; in France, 40, 85; manures for, 41; new Continental, 101; tied down, 53, 76, 85
Cirropetalum Medusæ robustum, 45, 373
Cities, garden, 138, 283, 379
Climate, and cultivation, lecture on, 161; influence of, on vegetables, 313
Clematis, grafting, 256; C. grata for covering low walls, 229; the propagation of, 112
Clerodendron myrmecophilum, 217
Cobham Park Gardens, Surrey, 74
Cœlogyne cristata showing regular peloria, 101
Coffea excelsa as a source of Coffee, 153
Cole, Mr. Rex Vicat (*British Trees*), 379
Coleus shirensis, 163
Colonial exhibition, at the Crystal Palace, 137; in the Royal Horticultural Hall, 206
Colonial notes, 46, 117, 130, 150, 229, 371, 392
Colour in Apples, 12
Concert in aid of gardening charities, 138, 217
Conifers as reclaimers of waste lands, 49
Co-operative grading of fruit, 153
Cordyline indivisa, 91
Cornus florida rubra, 326
Cornwall, early Potato culture in, 30
Cranberries for market purposes, 126, 139
Crane-fly, some new facts concerning the, 34
Crocus chrysanthus and its varieties, 148; C. Malyi, 163
Crops, rotation of kitchen-garden, 99, 122, 147
Crowea angustifolia, 242
Cryptomeria japonica and other Conifers at Ardwell, 218; C. japonica at Dropmore, 44, 105; large specimens of, 59, 170
Cucumber-seed, vitality of, 124
Cucumber mildew, 386; "spot" disease, 13, 138, 156, 188, 219, 251, 265, 284, 316; alleged cures for, 28, 201, 235
Cucumbers grown without fertilisation, 201
Cultivation, experimental, 20, 68, 131, 289; profitable, 129
Cupressus torulosa and the Cedar of Goa, 219
Currant-bud mite, the, 284, 298, 316, 341
Currants, Pear-shaped, 36
Cultural memoranda, 46, 149, 244
Cyclamen Coum, an interesting variety of, 133
Cyclamen, proliferous, 117
Cymbidium grandiflorum, 130; C. rhodocheilum, 378; C. Sanderi, 115
Cynorchis Lowiana, 98
Cypress-Pines of New South Wales, 41
Cypripedium × Argo-Mastersianum, 245; C. barbatum, 381; C. exul, a fused flower of, 146; C. Fairieanum, rediscovered, 265; C. Haywoodianum, 195; C. × Leeanum "J. Gurney Fowler," 88
Cypripediums at Flixton, near Manchester, 27

D

DAFFODILS, a census of, 265
Daffodils causing skin irritation, 171; for public taste, 235
Dahlia tubers, vitality in, 218
Dahlias The Mikado, 13, 29; a new strain, 196
Danae racemosa and the Laurel wreath, 14
Dean Hole, memorial to, 232
Dean, Richard, proposed testimonial to, 297; (*The Culture of Sweet Peas*), 283
Dendrobium chrysotoxum at Kew, 283; D. fimbriatum oculatum at Cherkley Court, Leatherhead, 166; D. parcum, a species with a movable labellum, 314; D. Seidelianum, 355, 390; D. undulatum at Kew, 283; D. Wardianum grown under cool treatment, 245, 266
Dendrobiums at Burford, 146
De Vries, on mutation, 321
Devon, South, gale in, 298
Digging, right or left-handed, 75, 90
Dinter, Herr, 217
Disa grandiflora, a yellow variety of, 166
Discount to gardeners, 104
Diseases of trees, illustrations of, 217; of plants, investigation of, 381
Douglas Fir, section of a trunk of the, 69
Drip in plant-houses, appliances for preventing, 86, 138, 155, 162, 196, 234, 284

E

ECKFORD, Mr. H., proposed testimonial to, 168, 185, 395
Edinburgh International Horticultural Exhibition, 40, 152
Egypt, Onions from, 217
Elæocarpus reticulatus, 150
Elder, the, 248
Electricity, dispelling fog in plant-houses by, 90
Ellwanger, George, 137
Embankment Gardens, the Thames, 88
Epidendrum Allemani, 98; E. ciliare at Kew, 283; E. Endresii at Kew, 70
Ephedra, the genus, 13
Epiphytes in England, 154
Eremurus, the species of, 66, 98, 133, 148, 358, 361, 362; for large beds, 384
Erica mediterranea hybrida, 40; E. Veitchii ×, 138, 228
Eucharis, the culture of, 13
Eugenia Ugni, fruits of, 89
Evesham, Asparagus culture at, 345; market gardening at, 275; gardeners' visit to France, 52, 76, 169
Examinations in horticulture, 185; for school teachers, 57, 136
Experimental cultivation, 20, 68, 289
Experiments with fungous diseases, 380

F

FALMOUTH garden, plants in a, 285, 315, 341
Fasciation in Agaricus personatus, 342
Fernery, the, 170, 229, 307, 375
Fern fronds, the diversity of form in, 33; pest, a curious, 375; culture of hardy, 170; tree, 70, 124; varieties, a protest, 229
Fir Grange, Weybridge, 134, 165
Fires in country houses, 58
Fisher, Mr. Peter, 155
Florida garden, a, 81
Florists' flowers, 11, 21, 38, 195, 250, 276, 364; degeneration of, 184
Flower beds, effective, 315; summer, 330
Flower garden, the, 7, 23, 39, 55, 70, 87, 102, 119, 135, 151, 167, 183, 198, 215, 231, 247, 263, 279, 295, 310, 327, 343, 359, 377, 393
Flower-pot, the "Tectum," 131
Flowers, a chart for determining the colour of, 312; in season, 153, 200, 265, 282, 297, 313, 361, 378; in the south-western counties, 212, 362; the abuse of, 281
Fog, effects of, on plants at Kew and other places, 12, 90

Forcing vegetables, 36
Foreign correspondence, 10, 162, 294, 358, 372
Forests, natural and artificial, lecture on, 221
Forestry, 82, 101, 132, 246, 317, 370 386; at Oxford, 153; exhibition at Park Royal, 281; extra-tropical, 371; facts and fancies in, 44, 155; land given for teaching, 90
Fossil plants, 12, 29
Foster-Melliar, Rev. A. (*Book of the Rose*), 101
Frost, an instrument for foretelling (Pagoscope), 133
Frost, effects of, 341, 360
Fruit Committee, the Departmental, 42, 137, 168, 200, 232
Fruit, co-operative grading of, 153
Fruit-crops and the weather, 362
Fruit-growing, a conference on, 281; in British Columbia, 141, 154; preserving, a lecture on, 61; register, 6, 36, 69, 115, 148, 182, 309
Fruit-trees, how to make a wall-shade for, 196; spraying, 121
Fruits, small, found in foreign catalogues, 374, 397
Fruits under glass, management of, 6, 23, 39, 55, 71, 87, 102, 119, 135, 150, 166, 182, 199, 215, 231, 246, 262, 279, 294, 311, 327, 342, 359, 376, 393
Fuchsias, raising seedling, 298
Fungus diseases propagated in the seed, 296; experiments with, 380

G

GARDEN cities, 138, 283, 379
Garden insects, a Conference on, 298
Garden tent, how to make a cheap, 357
Gardener and minister, a, 73
Gardeners, lectures to Aberdeen, 104; the training of young, 14, 44, 59
Gardening in Austria and Germany, 305
Gardening papers, notes on English, 25; a new American, 396
Gardening, the pleasures of, 113
Gatton Park, Orchids at, 100
Gentiana acaulis, a white variety of, 313
Genyorchis pumila, 166
Geological field class, the London, 248
German South-West Africa, 248
Ghent Quinquennial Exhibition, 396
Gibson James, appointment to Welbeck Abbey, 121, 130
Gilbert's, Sir Henry, library, 58;
Gladiolus, the hybridisation of, 145
Glass, toughened, 42
Goldring, William (*The Book of the Lily*), 157
Gooseberries, special manures and soils for, 68
Gordon, James, an old-time nurseryman, 201
Gordon's Grave, Roses from, 73
Grafting and its effects, 249
Grafting Azaleas, 122; Chrysanthemums, 25; Cucumber plant on to Marrow, 386; double, 256; Hollies, 31; main branches of Apple-trees, 250; the Pink on the Saponaria, 163
Grape-fruit, nomenclature of the, 171, 294
Grape Prince of Wales, 69
Grapes, on outside walls, 65, 106; record bunches of, 96; well preserved, 185
Gray, Mr. J. S., retirement of, 313
Grouse-disease, enquiry upon, 249
Growths, anomalous, as a result of wounds, 280
Gunnera scabra major, 18
Gunnersbury House, a garden of annuals at, 296; the Japanese garden at, 268

H

HAARLEM, bulb show at, 40
Haggard, H. Rider (*A Gardener's Year*), 9, 52
Hailstorm Insurance Company, the, 248
Hampton Court Vine, the, 58
Hardy fruit garden, 7, 22, 39, 55, 70, 87, 103, 119, 134, 151, 167, 183, 199, 215, 231, 247, 263, 279, 294, 310, 327, 343, 359, 377, 393
Hardy plants, 18, 376
Harper Adams College, 121
Hasluck, Paul N. (*Beehives and Beekeepers' Appliances*), 118
Hechtia argentea flowering, 261
Heidelberg, Transvaal, crop suitable for, 230
Heliamphora nutans, 194
Henderson, Mr. H., presentation to, 360
Herbarium, Gaspard Bauhin's, 9
Heterotoma lobelioides, 375
Highbury, Birmingham. Mr. Chamberlain's gardens at, 23; the rock-garden at, 217
Himalayan Rhododendrons, 136, 155, 189
Hippeastrums, at Kew, 70; at Liverpool Botanic Gardens, 218
Hodsock Priory Gardens and the Gardeners' Royal Benevolent Institution, 266
Hollies, grafting, 31
Holly-berries hanging for a long period, 340
Holly, English, in America, 105
Hollyhock, the 21, 44; disease, a preparation for treating, 336; as annuals, 106
Homeria collina flowering in South Devon, 297
Hooker, Sir Joseph, retirement from editorship of the *Botanical Magazine*, 8
Horticultural instructor, qualifications of a, 96
Horticulture in America, state, 154; in Cape Colony, 150
Hubbard, Mr. E., presentation to, 169
Hulme, F.E. (*Familiar Wild Flowers*), 283
Hybridisation of Pineapples, 41
Hybrids, names of, 361

I

IBERIS corifolia, 340
Insecticides, poisonous, and public sale, 200, 360
Insectivorous plant, an interesting, 194
Insects, garden, conference on, 298
Instructor, qualifications of a horticultural, 96
Inventions, new, 133, 191, 361
Irene, Transvaal, the gardens at, 4
Iris Kæmpferi and other bog plants, 308; I. tectorum on thatched roofs, 154
Irritation, plants causing skin, 41
Isleworth garden, notes from an, 164
Italy, vegetable crops in, 197

J

JAMAICA, agriculture in, 392
Japan, notes from, 10
Japanese garden, lecture on the construction of a, 268
Japanese horticulture, lectures on, 302
Jasminum nudiflorum and fertilisation, 90, 105; J. officinale fruiting in the open, 155; J. primulinum destroyed by frost, 14
Johnson, W. H. (*The Cultivation and Preparation of Para Rubber*), 249
Jones, Paul, gardening career of, 297

K

KENSINGTON Gardens, fatality in, 381
Kew, effects of fog at, 12; wild Roses at, 392
Kew gardeners, half holiday for, 200; social evening, 47
Kew Guild and gardeners, 385; dinner, 296, 362, 313, 330, 345
Kew Hand-Lists, prices of the, 58; notes, 34, 70, 98, 130, 163, 217, 250, 261, 283, 323, 373; Orchids at, 283; some plants in flower at, 283
Kimberley, horticulture at, 67
King, Mr. Herbert T., presentation to, 396
King's Walden Bury, Herts, 43
Kingswood, Sydenham Hill, 283
Kitchen garden, the, 6, 23, 39, 54, 71, 87, 103, 119, 135, 151, 167, 183, 199, 214, 230, 247, 263, 279, 295, 311, 328, 343, 359, 376, 393
Kitchen-garden crops, the rotation of, 37, 99, 122, 147
Kumus timber, 392
Kylemore Castle, Co. Galway, 50

L

LABELS, continental plant, 156
Laburnum wood used for making chairs, 397
Lachenalia hybrids, new, 210
Lachnus viminalis, the giant Willow Aphis, 243
Lælio-Cattleya × Dominiana, 245
Lantanas, a weed in Queensland, 131
Larch, a hybrid, 389; Japanese, diseased, 235
Laurel wreath, the ancient, 14
Laurelia aromatica, 230, 252
Laurent, Emile, memorial to the late, 297

LAW NOTES:—Leeman *v.* Linden & Co. (Orchid sale from coloured drawings), 92, 187; nurseryman bankrupt, 381; Pharmaceutical Society *v.* XL. - All Insecticide Co. (withdrawal of appeal), 46; Smith *v.* Duke of Devonshire (claim for compensation under Market Gardeners' Act), 235

Lawns, the manuring of, 17
Leaves from my Chinese note-book (E. H. Wilson), 337, 356, 382
Lecture on forests, natural and artificial, 221
Lectures, Royal Horticultural Society's, disturbance at the, 234
L'entente horticole, 72
Lettuce, American varieties of, 233
Liège Horticultural Exhibition, 89, 121, 186
Lilies, Oriental and American, 357
Lilium Glehni, 3
Lily of the Valley, extraordinary specimens of, 73; poisonous character of, 13
Lissochilus Mahoni, 250; L. purpuratus, 290; L. ugandæ, a new species, 323
Listrostachys hamata, 34
Liverpool Botanic Gardens, Hippeastrums at the, 218
Lobelia Queen Victoria, culture of, 46; L. tenuior, 46
Locust tree, the, for timber purposes, 370
Lonicera fragrantissima, 195
Lycaste Lucianiana, 130
Lyons, horticultural exhibition at, 281

M

MADRESFIELD Court Gardens and the Gardeners' Royal Benevolent Institution, 282
Magnolia Kobus, 26; species, 250
Maidenhair Ferns on walls, 48
Manchester Botanical Gardens offered for sale, 25, 73
Manures for Chrysanthemums, 41; Peach-trees, 156, 202, 234, 260, 324, 363
Manuring of lawns, 17
Market gardeners' visit to France, 52, 76, 169
Market gardening, 52, 123; in the Midlands, 275
Market measures, 104, 124
Markets, a remedy for glutted, 123
Maxillaria ochroleuca flowering at Kew, 163
May, the weather during, 362
Meconopsis grandis, 397; M. integrifolia, 200, 291, 317, 325, 341
Meconopsis, the species of, 369
Melampyrum, the biology of, 379
Melon, a good and early variety of, 315
Mendel's experiments with Peas, 154
Mentone, a flower show at, 255
Mildew on Cucumber-plants, 386
Mite, the bulb, 185
Mites, injurious, 40
Moles attacking roots of trees, 202; the destruction of, 137
Monmouthshire, horticultural instruction in, 380
Monro, Geo., Ltd., concert promoted by, 138, 217
Moore, the late Charles, 299
Morel, the cultivation of the, 313
Mosquitos, a reputed plant for exterminating, 282
Mushroom-beds, an improved method of supporting, 139
Mushroom disease, 265
Mutation theory, De Vries on the, 321
Myrobalan Plum, the, 16, 29, 45, 75

N

NAMING hybrids, 361
Narcissi from Cork, 309
Narcissus Cervantes flowering at Christmas, 169
Nepenthes, the pitchers of, 241, 260
New South Wales, Cypress-Pines of, 41; notes from, 117
Newstead, Robert, appointment of, 189
Nice battle of flowers, 153
Nicotiana Sanderæ, 24
Nitrate of soda, how to use, 379
Norwich, the new Bishopbridge Garden at, 217; pinetum, 396
Noter, Raphael de (*L'Hybridation des Plantes*), 323;
Novelties, 131; floral, 198; in Orchids during 1904, 1; plants of 1904, 29, 36

NURSERY NOTES:—Barr & Sons, Thames Ditton, 253; Charlesworth & Co., Bradford, 131, 309; Hartland, Mr. Baylor, Ardcairn, Cork, 353; Pearson & Sons, Lowdham, 340; Treseder & Co., Truro, 285; Veitch, J., & Sons, Chelsea, 5; Wallace & Co., Colchester, 353

O

OAK, the sessile-flowered, 101
Oaks, growth of durmast, 82; North American, 191

OBITUARY:—Adams, Jas., 400; Arkwright, John Hungerford, 351; Cocker, Mrs., 170; Crook, Thomas Miller, 170; Bounton, Thos., 143; Burrell, J., 240; Burvenich, Julien Victor, 271; Dewar, Robt. Menzies, 351; Epps, Jas., 143; Featherstone, Robert, 299; Fraser, Patrick Neill, 157; Hogg, Caroline, 143; Hollingworth, J., 336; Horne, John, 271; Kitley, John, 77; Low, Sir

Hugh, 264; Lubbers, Louis, 24; Macrae, Farquhar, 189; Marsh, Rev. Theodore Henry, 336; Mason, Alfred, 336; M'Omish, Donald, 157; Moore, Charles, 299; Morley, Lord, 153; Newbigging, John, 271; Paul, William, 216, 233; Rashleigh, Jonathan, 248; Rew, Mr., 240; Sanders, Edward A., 189; Schwacke, Dr. Wilhelm, 92; Smith, Thomas, 299; Stirling, John R., 30; Thomson, D. S., 368; Wade, Arthur W., 30; Webb, Col. William George, 386; Wilson, James, 240

Ocymum sanctum, a reputed mosquito plant, 282
Odontoglossum crispum G. W. Law-Schofield, 355; O. c. purpurascens, 381; O. c. Raymond Crawshay, 375; O. c. Solum, 322; O. × Lawrenceanum, 127; O. × Thompsonianum, 285
Odontoglossums at Arddarroch, 19
Oncidium dichromum, 163; O. porrigens, 34
Onion-growing on a large scale, 160
Onions, a scarcity of, 125: from Bermuda, 316; from Egypt, 217
Orange-trees, budding and grafting, 48
Oranges, hardy, 74; the Montauban, 391
Orchid collectors, risks of, 316
Orchid-houses, the, 6, 22, 39, 54, 71, 86, 102, 118, 134, 150, 166, 182, 198, 214, 230, 246. 262, 278, 295, 311, 326, 343, 358, 376, 392
Orchid notes and gleanings, 18, 45, 53, 83, 100, 116, 145. 165, 180, 213, 245, 290, 309, 355, 381, 390
Orchids, a sale of, 280, 344; at Bank House, Accrington, 355; at Burford, 116; at Fir Grange, Weybridge, 165; at Gatton Park, 100; at Walton Grange, 180; at Westfield, Woking, 83; at Woodhatch, Reigate, 145; in flower at Kew, 283; seedlings, the raising of, 32
Orphan Fund, Royal Gardeners', 40, 104, 105, 319, (annual festival) 281, (annual meeting), 110
Osiris, the bed of, 186
Over-sea supplies, 25, 122, 187, 233, 297, 380
Oxalis lobata, 97
Oxford as a school of forestry, 153

P

PALM, a branching, 263
Pagoscope, the, an instrument for foretelling the occurrence of frost, 133, 361
Paris, market-gardeners' visit to, 41, 52, 76, 169
Paris International Horticultural Exhibition, 73, 328, 334, 344, 395
Parks, changes in the London, 73
Parsons, Samuel (*Landscape Gardening*), 3
Paths, constructing garden, 226, 324, 342, 384
Paul, W., the late, 216
Peach crops, thinning, 342
Peach Sneed, or Earliest-of-All, 6
Peach-trees and manure-water, 260, 324, 363; early, dropping their buds, 55, 91, 106, 125, 129, 139, 156, 170, 234; manure for, 156, 202, 234
Peaches for early forcing, 55, 91, 106, 125; the best early and late varieties of, 76, 156
Pear Le Lectier, 116; midge, the, 315, 361; Passe Crassane, 11; Pius X., 309; Vice-President Coppiers, 69; Virginie Baltet, 116
Pears, stewing, 114
Peas and Potatos, early planting of, 80
Peas, Mendel's experiments with, 154; varieties of culinary, 166
Pelargoniums "Clorinda," 232; Mme. Crousse, 116
Peloria in Orchids, 101
Pencil, an indelible garden, 101
Pentstemons, culture of, 195; new varieties of, 11
Phaius tetragonus, 213
Phalænopsis, disease in, 146; in flower at Messrs. Charlesworth's nursery, 131; P. Schilleriana, enormous specimens of, at Tring Park, 152
Philageria Veitchii ×, 373
Phlox, herbaceous, propagating, 196
Phœnix Robelini in the South of France, 266
Phylloxera, lysol used for destroying, 24
Physianthus albens fruiting in the open, 155
Pictures at the Royal Academy, 273
Pineapples, the hybridisation of, 41
Pink and Saponaria grafted, 163
Pink, the, 389
Pinus insignis. 235; planting, 155; P. Nelsoni, 306
Plant diseases, investigation of, 381
Planting, wise and unwise, 313

PLANT PORTRAITS:— Æchmea lavandulacea, 170; Angelonia integerrima, 89, 376; Apple Cellini Pippin, 376; Arbutus Unedo, 163; Begonia Triomphe des Belvédère, 340; Bowkeria Gerardiana, 361; Bulbophyllum crenulatum, 89; Burbidgea schizostyla, 232; Cadalvena spectabilis, 9; Catasetum Christyanum, 232; Cattleya Warscewiczii, 376; Colchicum libanoticum, 296; Cotoneaster rotundifolia, 232; Cotyledon elegans, 9; Cypripedium Albertianum, 376; C. auriferum, 376; C. Elmireanum, 376; C. Madame Jules Hye, 376; Dendrobium regnum, 170; Derris albo-rubra. 232; Erica lusitanica, 361; Euphorbia pulcherrima plenissima, 163; Gnidia polystachya, 89; Hippophae rhamnoides, 296; Iris "Parsamb" ×, 228; Listrostachys bidens, 296; Lobelia tenuior, 313; Lycaste locusta, 361; Magnolia hypoleuca, 163; Nepenthes Rajah, 361; Pinanga maculata, 232; Phyllostachys nigra, 9; Prunus pseudo-Cerasus, 296; Meconopsis integrifolia, 228; Musa paradisiaca rubra, 163; Nepenthes Vallieræ, 340; Nerine Bowdeni, 340; Nicotiana Forgetiana, 170; N. Sanderæ, 163; Pelargonium Lady Mary Fox, 340; Rhabdothamnus Solandri, 361; Rhododendron Perle de Ledeberg, 242; Rhipsalis dissimilis var. setulosa, 296; Romneya trichocalyx, 170; Rosa Hugonis, 170; R. moschata nivea, 340; Roses Madame Jean Dupuy, 340; Madame Norbert Levavasseur, 46; Schneewittchen, 340; Swainsona Maccullochiana, 9; Tulipa linifolia, 89; Vanilla Humblotii, 9; Yucca guatemalensis, 89

PLANTS, NEW OR NOTEWORTHY:— Acanthus Perringi, 2; Arachnanthe annamensis, 391; Caltha elata, 178; Cœlogyne Lawrenceana, 227; C. nitida and C. n. alba, 274: Cymbidium Schröderi, 243; Cypripedium Fairieanum, 274; C. Gratrixianum, 76; Cyrtanthus inæqualis, 261; Heloniopsis breviscapa, 178; Kalanchoe angolensis, 370; K. magnidens, 370; Malortiea Tuerckheimii, 19; Narcissus Corbularia monophylla × Tazetta, 82; Platyclinis latifolia, 70; P. uncata, 45; Plectranthus crassus, 98; Primula Cockburniana, 331, 345; P. Cottia, 130; P. deorum, 98; P. Veitchii, 344; Rhabdothamnus Solandri, 146; Rosa Banksiæ, 227; R. microcarpa (sorbiflora), 227, 266; Scaphyglottis Cogniauxiana, 33; Stapelia divergens, 49

Plants, shelter for, 193; some new aquatic, 121
Plants under glass, management of, 7, 23, 38, 55, 71, 86, 103, 118, 134, 151, 167, 182, 198, 215, 230, 247, 262, 278, 294, 311, 326, 342, 358, 377, 392
Poet, lines from a Scottish, 341
Poisonous insecticides, 360; fine for sale of, 200
Polygonum cuspidatum for holding banks, 153
Post Office vagaries, 89
Pot, the "Tectum" flower, 131
Potato-cooking tests, 2, 83, 164, 180
Potato Discovery, 266; experiments at Cambridge University, 217; scab disease, 185; too much !, 9; P. Up-to-Date, 2
Potatos, alleged degeneracy of varieties of, 219, 252, 258; census of varieties of, 61; culinary value of, 153; effect of soil and manure on the flavour of, 125, 132; express culture, 179; extra early, from Ireland, 378; lecture on retarded, 237; in Cornwall, 30; planting, 80, 201, 218, 234, 252, 284; prices of, 44, 284; raising new varieties of, 100, 132; the shapes of, 153; total production of, in 1904, 217; warty disease and lime, 100
Prevention of Corruption Bill, the. 168
Primula deorum, 340; P. Veitchii, 344; P. vittata, 390
Prince's restaurant, winter garden at, 282
Pruning Roses, 203
Pulmonaria arvernensis alba, 261

Q

QUERCUS pedunculata and Q. sessiliflora, rate of growth compared, 132

R

RAFFIA tape, a new tying material, 313
Railway rates, 296
Rainfall and the Wheat crop, the, 185; at Rothamsted in 1904, 26; in co. Kilkenny, 59; in 1904, the, 41
Redouté, the botanical works of, 41
Rehmannia angulata at Lockinge, 46
Rhodes', the late Cecil, gardens near Kimberley, S.A., 67
Rhododendrons, 354, 370; at Regent's Park, 378; at Singleton, 136, 155; Himalayan, 136, 155, 189
Ripersia terrestris, a root parasite, 202
Riviera, frost in the, 42, 58
Roberts, Mr. J., presentation to, 153
Robinson, E. Kay (*The Country Day by Day*), 83
Roofs, thatched, 154
Rooks, the utility of, 121
Rosa gigantea flowering, 42, 136: R. microcarpa (sorbiflora), 227, 266
Rosary, the, 42, 101, 117, 203, 213, 381, 392
Roses, a hybrid between R. microphylla and R. rugosa, 214; Dorothy Perkins, 381; Fortune's yellow, 214; Frau Peter Lambert, 101; Grand Duchess Alexandra, 117; climbing, 213, 381; Etoile de France, 381; from Gordon's grave at Khartoum, 73; inserted buds remaining dormant, 384; pruning, 203; wild, at Kew, 392
Rotation of kitchen-garden crops, 37, 99, 122
Rothamsted, rainfall at, in 1904, 26
Royal Horticultural Society's Awards, 328, 345, 384
Rubber, Castilloa, 104; in the Guianas, 374
Rust diseases transmitted in the seed, 296
Rutherfurd, Helena (*Another Hardy Garden Book*), 380

S

SAHARANPUR Botanic Garden, 9
Sander's, Messrs., nursery at Bruges, 251
Sander, Mr. Edgar, 395
Sanders, T. W. (*The Book of the Potato, &c.*), 212
Sapindus marginatus, 195
Sargent, Charles Sprague (*Manual of the Trees of North America*), 307
Sarracenia Catesbaei, 73
Saxifraga Burseriana and its varieties, 197
Scaphyglottis Cogniauxiana, habitat of, 121
Scheider, Camillo Karl (*Illustriertes Handbuch der Laubholzkunde*). 169
Schlich, Dr. W. (*Manual of Forestry*), 169, 232
Schröder, Baron, retirement of, from Council of the Royal Horticultural Society, 312
Schizanthus wisetonensis, 362; as pot plants, 341

SCIENTIFIC COMMITTEE:—Agapanthus stems attacked with fungus, 30; Amaryllis bulbs diseased, 219; Apples affected with Brown-rot, 126; Arums diseased, 254, 286; Ash, fasciated branch of, 78; the Stag's-horn, 190; Auricula-flower, a striped, 286; Big bud in Hazel, 78; Capnodium on Oranges, 190; Carnations diseased, 30; Cereus amecaensis, 364; Cockroach, a new, in greenhouses, 126; Cotoneaster, scale on, 364; Crinum bulbs, diseased, 158; and injured, 189; Crinum Rattrayi, 219; Croton and Dracæna leaves decaying, 158; Cucumbers, disease of, 190; Cyclamen leaves discoloured, 78; Cyrtanthus lutescens, 158; Daffodil poisoning, 158, 190; Dendrobium chrysotoxum with abnormal spur, 286; Deterioration of vegetatively reproduced varieties, 254; Dialælia Veitchii, a bigeneric Orchid, 190; Douglas Fir, a short-leaved form of the, 30; Etherisation of plants, 318; Eucalyptus occidentalis, galls on, 78; Fasciation in plants, 254; Fruit-buds, formation of, 190; injury to, 318; Galanthus nivalis var. poculiformis, 158; Hail, effect of, 190; Hazel, big bud in, 30, 78; Henslow, Rev. Prof., testimonial to, 30, 78, 158, 189; Horse-Chestnut shoots injured, 286; twigs diseased, 254; Iris, malformed, 254; Spanish Iris, diseased, 219; Iris with two anthered stamens, 286; Lampronia rubiella, the Raspberry moth, 364; Laurel leaves diseased, 158, 364; Meconopsis integrifolia awarded a Botanical Certificate, 286; Montbretia corms failing, 318; Mushrooms, malformed, 158; Narcissus Bulbocodium, geographical forms of, 254, 286; Narcissus fly, the, 254; Orange-leaves covered with Capnodium, 190; Oranges attacked by Scale, 30; Oranges, "Navel," 126; Orobutta lapidaria, a mite infesting Apple-trees, 78; Pagoscope, the, 318; Peziza coccinea on a tree trunk, 126; Phyllocactus and Cereus hybridised, 318; Phyllocactus, forms of, 364; spots on, 78; Pine-bud moth, the, 189; Pine shoots injured by Retinia buoliana, 158; Potatos, alleged deterioration of varieties of, 126, 158, 220, 237, 286, 318; Primrose, a double, 286; malformed, 286; Primulas, new species of, 364; Ranunculus asiaticus var. sanguinea, 286; Retinia buoliana, an insect injuring Pines, 158; Richardia diseased, 219; with second spathe, 286, 364; Rose-rust, Coleosporium pingue, 254; Rose shoots injured by weevils, 318; Rye, effect of manure on, 318; Scillas, seedling, 318; Sechium edule, germination of, 30; Seeds from Caucasus, 364; Spirits of tar for healing wounds on trees, 78; Spruce-Fir, galls on, 219; Testacella halietidea, the worm-eating slug, 126; Tropæolum, a hybrid, 318; Tubercularia vulgaris on Beech, 78; Vine leaves spotted, 254; Walnut, slime fungus on, 78; Wisley, scientific research at, 190; Witch's-broom on Hornbeam, 254; Worm-eating slug, a, 126; Yew shoots injured by an alga, 364

Scilly Isles, the, 58
Seat, garden, how to make a Bamboo, 293
Seedling trees, the handling of, 10
Seed sowing, 212, 252, 316, 325
Seeds packed for transit, 90, 124, 139, 163, 171
Seeds, vitality of, 124
Seedsman as High Sheriff, 233
Senecio auriculatissimus, 213
Shelter for plants, 193
Shrubs suitable for the Midland Counties, 192, 208; sweet-scented, 154; transplanting, 90, 124
Simpson, Mr. C., presentation to, 329
Singleton, Rhododendrons at, 136, 155; Tsuga mertensiana at, 155
Skin irritation, plants causing, 41
Small Holdings Act, 297
Smith, A. Bernard (*Poisonous Plants*), 340
Snowdrops, early, 42

SOCIETIES:—Aberdeen College of Agriculture, 158; Aberdeen Chrys., 78; Addlestone, Chertsey, and Ottershaw Gardeners', 142, 190, 386; Agricultural Seed Trade Association, 367; Barnsley Paxton, 158; Bath Gardeners' Self-Help and Debating, 47, 79, 222; Bath and District Gardeners', 16, 47, 286; Beckenham Hort., 31, 239; Blairgowrie Hort., 282; Bournemouth and District Gardeners', 222, 271, 386; Bristol and District Gardeners', 47, 190, 286; British Gardeners' Association, 25. 28, 41, 58, 73, 93, 110, 141, 152, 171, 190, 206, 222, 271, 313, 319, 330, (annual meeting) 364, 378; Brixton, Streatham and Clapham Hort., 190, 222; Cardiff Gardeners', 47, 79, 126, 190, 222; Chelmsford and District Gardeners', 47, 79, 94, 112; Chester Paxton, 79, 94, 158, 222, 270; Cornwall Daffodil and Spring Flower, 239; Crawley and District Gardeners', 94, 126; Croydon and District Hort., 31, 78, 190, 222, 239, 286; Devon and Exeter Gardeners', 190, 222; Devon Daffodil and Spring Flower, 254; Dorchester and District Gardeners', 94; Ealing Hort., 319; Egham and District Gardeners', 16, 31, 94, 386; Gardeners' Debating, 16, 31, 47, 79, 94, 112, 126, 142, 158, 190, 222, 239, 286, 386; Ghent Chambre Syndicale, 137, 169; Headley Gardeners', 190; Horticultural Club, 30, (annual meeting and dinner) 110, 221, 303, 378; Isle of Wight Hort., 31, 142, 239; Kingston Gardeners', 79, 94, 142, 126, 222; Lee, Blackheath, and West Kent Hort., 222; Liége Hort. Exhibition, 318; Linnean, 24, 57, 89, 93, 120, 126, 153, 200, 206, 248, 270, 312, 319, 360, 386; anniversary meeting, 330; Liverpool Hort., 94; London Dahlia Union, 78; Loughborough and District Gardeners', 222; Manchester and N. of England Orchid, 30, 78, 110, 142, 174, 221, 319; Midland Auricula (annual exhibition), 254; Midland Carnation and Picotee, 88; National Chrysanthemum, 72, 78 (annual meeting), 93, 110, 395; Midland Daffodil (annual exhibition), 255; National Auricula and Primula, 269; National Dahlia, 248; National Fruit Growers' Federation, 41, 174; National Potato, 25, 56, 61, 142, 158; National Sweet Pea, 30, 190; National Tulip, 333; North Ferriby and District Gardeners', 94, 158, 222; Nursery and Seed Trade Association, 158; Pangbourne and District Gardeners', 158; Paris International Horticultural Exhibition, 72, 324, 328, 334; Professional Gardeners' Friendly Benefit, 141; Ramsey Hort., 58; Reading and District Gardeners', 94, 142, 190; Redhill, Reigate, and District Gardeners', 16, 31, 79, 94, 158, 222, 286; Royal, 168, 256, 313; Royal Agricultural, 200; Royal Botanic, 190, 168, 270, 319, 366; Royal Caledonian Hort., 46, 351; Royal Dutch Bulb Growers', 190; Royal Horticultural, 14, 28, 59, 74, 89, 97 (annual meeting), 106, 120, 126, 140, 158, 171, 189, 200, 204, 232, 235, 266, 280, 300, 312, 318, 331, 378, 397; Royal Meteorological, 126; Shirley (Southampton) Gardeners', 286; Shropshire Hort., 142; Société Française d'Horticulture de Londres (annual dinner), 47; Société Neerlandaise d'Horticulture et de Botanique, 366; Society for Horticultural Science, 63; Surveyors' Institution, 89, 121, 153, 280, 329; Torquay District Gardeners', 221; Uitenhage, Cape Colony Hort., 206; United Hort. Benefit and Provident, 31, 126, 174 (annual meeting), 239, 303; Wargrave Gardeners', 16; West Indian Agricultural, 126; Woodbridge Hort., 78; Worthing and District Gardeners', 112, 286; York Gala, 398

Soft-rot disease of Calla, 9
Solanum Commersoni and edible Potatos, 105; S. jasminoides, propagation of, 16
South Africa, Begonia Gloire de Lorraine in, 372; horticulture in, 4
South African garden, a, 67
Species, vanishing, 385
Spraying fruit-trees, 23, 121, 198
Spiræa Billardi, 12; S. bracteata, 149
Statice fruticans, 59
Statices at Teneriffe, 9
Stauropsis gigantea, a good specimen of, 166
Stenoglottis fimbriata, 84
St. James's Hall and horticultural shows, 105
Stocks, Apple, raising, 202
Strawberry, alpine, "Millet," 69
Strawberries, manures for, 20; the cultivation of, 20
Streptosolen Jamesoni, culture of, 375
Stocktaking, 25, 122, 233, 297, 380
Sugar-growing, up-to-date, 232
Supplies, oversea, 25, 122, 233, 297, 380
Sutton, Mr. Leonard, presentation to, 361
Swanley Horticultural College, 185, 201, 345
Sweet Peas, note on, 195
Swertia Tashiroi in Japan, 58
Synanthy in Cypripedium Exul, 146

T

TACSONIA mollissima, fruiting in the open, 284; T. Volxemi, the culture of, 46
Temple flower show, the, 344, 345, 386
Teneriffe, extermination of the flora of, 9
Tennis-lawn, dimensions of a, 272
Tent, how to make a Garden, 357
Thames Embankment Gardens, the, 88
Theobald, Fred. V. (*Insect Life*), 279
Thunbergia natalensis, 162
Timber crops, French, 252; Malay, 392
Timber value of exotic trees, the, 177, 202, 209, 246, 317
Tipula oleracea (Crane fly), 34
Tomato disease, a new (Alternaria), 92; leaves, intumescence of, 338; "Black stripe" disease of, 201; the trade in, 121
Trachelium cœruleum, culture of, 46
Training of young gardeners, 14, 44
Transvaal, botany and forestry of the, 371; crops suitable for the Heildelberg district of, 230
Transvaal plants, 46; agriculture, 392
Travellers, commercial, in gardens, 315, 325, 341
Tree Ferns, 70
Trees and Shrubs, 10, 138, 195, 230, 250, 262, 326, 384, 389
Tree, illustrations of diseases of, 217; the timber value of exotic, 177, 202, 209, 246, 317; transplanting, 203
Trelissick Lily pond, 324
Treloyhan House, Cornwall, 84
Trenching land, method of, 128
Trillium grandiflorum, 308; T. g. roseum, 375; T. g. in the wild garden, 325
Tsuga Mertensiana at Singleton, 155
Tulipa suaveolens and T. præstans, 275, 385
Tulips at Ardcairn and Colchester, 353; late flowering, 340
Tunis, frost in, 89
Turf-cutting machine, a new, 191
Turnips grown from Scotch seed, superiority of, 340
Tylney Hall, near Basingstoke, 257

U

UGANDA and the Victoria Falls, 229
Undermount, Bonchurch, Isle of Wight, 122
Upton Grove, Tetbury, the conservatory at, 40

V

VANCOUVERIA hexandra, 376
Vanda Watsoni, 123
Varieties, alleged degeneracy of, 200, 219, 264, 284, 313
Vegetable crops in Italy, 197
Vegetable forcing, 36, 51
Vegetables, 37, 99, 122, 166, 201, 330, 354; illustrations of, 169; influence of climate on, 313
Veitch Memorial Trust, 104
Ventnor in January, 73
Veronica filifolia, 261
Victoria Falls, Uganda, 229
Vienna Botanical Congress, 153, 378
Viger, M., honour conferred on, 58
Vilmorin Memorial, 24, 265
Vine culture on outside walls, 65, 106, 219
Vine, the Hampton Court, 58, 282
Vines, grafted and ungrafted, 233
Violets from Scotland, 171; the culture of, 244
Vries, Hugo de (*Species and Varieties, the Origin by Mutation*), 821

W

WALES, afforestation in 90
Wallflowers, two good varieties of, 284
Wall shade for fruit-trees, how to make a, 196
Walls, beautifying cottage, 99; wood ripening on north, 13
Walmer and Deal Castles, 102
Walmer Place, near Deal, 314
Walton Grange, Orchids at, 180
Warren, The Hayes, Kent, 308
Waterfield, Margaret (*Garden Colour*), 374
Watering plants in pots, 244
Water supply and the weather, 171
Watsonias, some species of, 275
Weather and the fruit crops, 170, 171, 262, 266, 330, 363
Weigt, Mr. G. H., appointment of, 265
Well-head used as a garden ornament, 147
Weston, Mr. J. G., presentation to, 360
Wheat-crop and the rainfall, 185
Widdringtonia Whytei, 18
Winter flowers in the South-west of England, 54
Winds, north-east, effect of, 341
Wisley Gardens, 394; in spring, 276
Woburn Fruit Farm report, 24
Wood, Mr. J. Medley, 381
Wood ripening on north walls, 13, 59
Woodhatch, Reigate, Orchids at, 145
Worth Park, Tree-Carnations at, 13
Wounds, hereditary transmission of anomalies caused by, 280
Wreath, the ancient Laurel, 14

X

XANTHORHIZA apiifolia, 230

LIST OF ILLUSTRATIONS.

Abelia uniflora, a flowering spray of, 323
Adonis amurensis, 188
Æcidium grossulariæ, a disease of Gooseberries, 304
Agaricus personatus, a fasciated specimen of, 342
Agave americana flowering at Parkfield, 37
Alpine-house, view in an, 245
Alternaria solani (a disease of Tomatos), 92
Anemone nemorosa, a double-flowered form of, 307
Aphis, the Giant Willow, 243
Apple Fenn's Wonder, 20
Apple-tree with inter-grafted branches, 250
Arcade made of Bamboo, an, 165
Asparagus Sprengeri in flower, 10
Asters, a bed of, 277

Bamboo, an arcade made of, 165
Bamboo flower-holder, a, 165; garden seat, details for constructing a, 293
Bars, anti-drip, 86, 138, 155, 196
Bay trees and Azaleas in Messrs. Sander's nursery at Bruges, 251
Beech, Weeping, at Cobham Park, Surrey, 74
Begonia "Duchess of Cornwall," p. iv., Supp., June 3
Begonia Rex "Ne Plus Ultra," p. iii., Supp., June 3
Bee, cell of the Queen, 187
Belvedere, St. Lawrence, I.W., view of the rockery at, 181
Brunsvigia Josephinæ, inflorescence of, 186
Brussels Botanic Gardens, view in the winter garden at the, 91
Bullock, Mr. A., portrait of, 7

Calodendron capense, flowers and foliage of, 292
Canna Papa Crozy, 356
Cantua buxifolia, a flowering spray of, 173
Cargo-boats upwards bound, at Ichang, China, 337
Carnation "Elizabeth," 285
Cattleya Schröderæ "The Baron," p. i., Supp., June 3
Ceanothus thyrsiflorus, a flowering spray of, 179; flowering against a wall in Kew Gardens, 179
Ceropegia Woodi, seed pod of, 244
China, views in, 337, 382
Chrysanthemums tied to the staging in a greenhouse, 53
Clarke, Mr. W. H., portrait of, 7
Cobham Park, Surrey, views in the gardens at, 74, 75
Cœlogyne cristata, a peloric flower of, 101
Cordyline indivisa in the gardens at Abbotsbury Castle, 66
Crane-fly or Daddy-longlegs, the, 34
Cripps, Messrs., prize group at the Temple, 363
Crocus Malyi, 163
Crowea angustifolia, 242
Currant-buds affected with the mite, 31
Cutbush, Messrs., rockery at the Temple, 365
Cyclamen, a proliferous, 117; C. Coum, an interesting variety of, 133
Cymbidium Sanderi, 115
Cypripedium Gratrixianum, 77; C. × Haywoodianum, 195; C. plants, three well-flowered, 27
Cyrtanthus angustifolius grandiflorus compared with C. inæqualis, 261; C. inæqualis, a new species from Cape Colony, 261

Daffodils and fruit-trees in an Evesham orchard, 275
Dendrobium parcum with movable spring-like labellum, 314
Dendrobium triflorum (cymbidioides), 15
Divider, a metal, for use in beehives, 359
Douglas Fir, section of a stem of the, 69
Drip preventives in greenhouses, 86, 138, 155, 196

Erica arborea, 228; E. lusitanica (codonodes), 228; E. × Veitchii, 228
Exoascus deformans, Peach-leaf "blister" disease, 294

Fasciated specimen of Agaricus personatus, 342
Flower-bed, a novel carpet, 253
Flower-holder made of Bamboo, 165
Fyfe, W., portrait of, 6

Garden tent, details for constructing a, 357
Gibson, James, portrait of, 131
Gloxinia Kaiser Wilhelm, 356
Gooseberry disease (Æcidium grossulariæ), 304
Grafting, examples of, 199
Grape-vine avenue at Kimberley, S.A., a, 67
Greenhouse sash-bars showing anti-drip appliances, 86, 138, 155, 196
Gull, the black-headed, 35; castings of the, 35
Gunnersbury House, view in the Japanese garden at, 269

Heliamphora nutans, an insectivorous plant, 194
Heloniopsis breviscapa, 178

Ichang, China, scene on the river at, 337
Irene, Transvaal, views in the grounds at, 4, 5
Iris tingitana, 339

Japanese garden at Gunnersbury House, 269
Jordan, F., portrait of, 6

Kimberley, the late Cecil Rhodes' gardens at, 67
King's Walden Bury, Hertfordshire, 43
Kylemore Castle, Co. Galway, 50

Lachenalias aurea, 211; Brilliant and Jean Rogers, 210; pendula Aureliana, 211
Lachnus viminalis, the giant Willow aphis, 243
Lampronia rubiella (Raspberry moth), 288
Larus ridibundus, the Black-headed Gull, 35
Leather-jacket, the, 34; burrow of the, 34; burrows excavated by rooks, 34
Leaves of hardy hybrid Oranges, 391
Lilium Glehni, 3
Linton Park, Maidstone, the gardener's cottage at, 99
Lissochilus purpuratus, 290

Meconopsis grandis, 369; M. integrifolia, 291
Miller, W. A., portrait of, 6
Moore, Charles, portrait of the late, 299

Narcissus (Corbularia monophylla × N. Tazetta), 82; Nectarine, 309; Pelops, 309
Newstead, Robert, portrait of, 189

Odiham Vicarage, Hampshire, 99
Odontoglossum × amabile var. Ixion (p. ii., Supp., June 3); O. × crispo-Harryanum "King Edward," 276; O. c. Raymond Crawshay, 375; O. × Lawrenceanum, 197; O. × Thompsonianum, 285; O. × Wiganianum, 274
Onions, a bed of transplanted, 203
Optimus turf-cutter, 191
Orange-tree, a hardy hybrid, 391

Pagoscope, the, an instrument to foretell the occurrence of frost, 133
Paul, William, portrait of the late, 216
Peach-leaf "blister" (Exoascus deformans), 294
Pear-midge, the, 315
Pear Passe Crassane, 11; "Santa Claus," 21
Pelargonium "Madame Crousse" on a house-front at Ventnor, 116
Pergola one mile in length, a, 67
Phalænopsis growing in Messrs. Charlesworth & Co.'s nursery, Bradford, 131
Phormium tenax in the gardens at Kylemore Castle, 51
Ping-Shan-Pa, the home of the Chinese Primula, 382
Pinus Nelsoni, 306
Pond in Trelissick gardens, 325
Portrait of M. Phillippe de Vilmorin, 47
Primula deorum, 98; P. Cockburniana (scarlet-flowered), 331; home of the Chinese, 382, 383; P. vittata, 390

Raspberry-moth, the (Lampronia rubiella), 288
Rhabdothamnus Solandri, 146
Rhododendron hybrid tree at Singleton, near Swansea, a large, 137; R. Lady Godiva, 371; R. Pink Pearl growing in Sunningdale Park, Berks, 354; R. Sappho, 370
Rhododendrons in the nursery of Mr. Anthony Waterer, near Woking, 355
Richardias at Trelissick, 324
Rockery exhibited by Messrs. Cutbush & Son at the Temple Show, 365
Rosa sorbiflora, 227
Roses, Lady Gay, 349; Waltham Bride and Débutante, 347

Sarracenias at the Temple Show, 373
Seat, details for constructing a Bamboo garden, 293
Senecio auriculatissimus, 213
Shades for fruit walls, 196
Spiræa bracteata, 149

Tent, details for constructing a garden, 357
Thunbergia natalensis, 162
Tipula oleracea (Crane-fly), 34
Thomson, D. S., portrait of the late, 368
Tomato disease, a new, 92; leaves showing intumescent tissues, 338
Transvaal, a garden staff in the, 4
Treloyhan House, Cornwall, 85
Trillium grandiflorum, 308
Turf-cutter, the Optimus, 191
Tylney Hall, view in the gardens, at, 257, 259

Vanda Watsoni, 123
Vilmorin, M. Philippe de, portrait of, 47

Wall-shade for fruit-trees, 196
Waterfall in the grounds at Kylemore Castle, 51
Well-head as a garden ornament, 147, 257
Widdringtonia Whytei showing two forms of growth, 18, 19
Willow-aphis, the giant, 243
Wilson, E. H., portrait of, 114
Wood, J. Medley, portrait of, 381

Young, W. H., portrait of, 6

SUPPLEMENTARY ILLUSTRATIONS.

Angiopteris evecta var. Teysmanniana Growing in the State Botanic Gardens, Brussels (May 27)
Berlin Botanic Gardens, Views in the Newly-constructed Rockery of the (June 10)
Bougainvillea spectabilis Flowering at Redlands, California (March 18)
Bridge, an Ornamental, in the Gardens at Kingswood, Sydenham Hill (May 6)
Brunsvigia gigantea Flowering in the Open at Belvedere, St. Lawrence, I.W. (March 25)
Calodendron capense Flowering in the Botanic Gardens, Sydney (May 13)
Camellia-house at Leyswood, Groomsbridge (January 28)
Castles of Walmer and Deal, on the South-east Coast of Kent (February 18)
Cobham Park, Surrey, the Residence of C. Coombe, Esq. (February 4)
Cymbidium rhodocheilum (June 17)
Cypripedium × Leeanum var. J. Gurney Fowler (February 11)
Highbury, Birmingham, View in the Gardens of the Right Hon. Joseph Chamberlain (January 14)
Hooker, Sir Joseph Dalton (January 7)
Magnolia Kobus, Deciduous Species from Japan (April 29)
Oaks and other Trees in the Arnold Arboretum, Cambridge, Mass., U.S.A. (April 1)
Pelargonium Clorinda, a Large-flowering Variety with Scented Leaves (April 15)
Phalænopsis Schilleriana in the Gardens of Lord Rothschild, Tring Park, Hertfordshire (March 11)
Primula sinensis, a Batch of the "Stellate" Type of (February 25)
Primula Veitchii (June 3)
Rosa gigantea (March 4)
Spring Garden in the Grounds at Highbury, near Birmingham (April 8)
View in the Conservatory at Upton Grove, Tetbury (January 21)
View in the Gardens at Chesfield, Hampton Wick (June 24)
Views in the Gardens at Walmer Place, near Deal (May 20)
Views from German South-West Africa (April 22)

EXTRACT FROM SELECT LIST OF

BOOKS on GARDENING.

TO BE OBTAINED AT THE

"Gardeners' Chronicle" Office,

From H. G. COVE, Publisher.

Prices quoted are in all cases post free.

Alpine Plants.—A Practical Method for Growing the rarer and more difficult Alpine Flowers. By W. A. Clark. With Illustrations from photographs by Clarence Elliott. In Cloth, 3*s.* 9*d.*

Alpine Flowers for Gardens. By W. Robinson. Revised Edition. With Illustrations. 8vo. 10*s.* 11*d.*

Alpine Flora: for Tourists and Amateur Botanists. By Dr. Julius Hoffmann. Translated by E. S. Barton (Mrs. A. Gepp). With 40 Plates, containing 250 Coloured Figures, from Water-Colour Sketches by Hermann Friese. 8vo. 7*s.* 10*d.*

Apple, The Book of the. By H. H. Thomas, Assistant Editor of "The Garden," late of the Royal Gardens, Windsor. Together with Chapters by Harry Roberts on the History and Cooking of the Apple and the preparation of Cider. Illustrated. Cr. 8vo. Cloth 2*s.* 9*d.*

Asparagus, The Book of. With sections on Celery, Salsafy, Scorzonera, and Seakale; and a Chapter on their Cooking and Preparation for the Table. By Charles Ilott, F.R.H.S., Lecturer on Horticulture to the Cornwall County Council. Illustrated. Cr. 8vo. Cloth 2*s.* 9*d.*

Bamboo Garden, The. By Lord Redesdale. Illustrated by Alfred Parsons. 8vo. 10*s.* 10*d.*

Bee, the book of the Honey. By Charles Harrison. Illustrated. Of interest to experienced bee-keepers as well as to the novice. Cr. 8vo. 2*s.* 9*d.*

Bee-Keeping, Book of. A very Practical and Complete Manual on the Proper Management of Bees, especially written for Beginners. By W. B. Webster, First-class Expert, B.B.K.A. Fully Illustrated. In paper, 1*s.* 2*d.*; in cloth, 1*s.* 8*d.*

Begonia Culture for Amateurs and Professionals. Containing Full Directions for the Successful Cultivation of the Begonia, under Glass and in the Open Air. By B. C. Ravenscroft. New edition, revised and enlarged. Illustrated. In paper, 1*s.* 2*d.*

Botany, A Manual of Agricultural. By John W. Paterson. From the German of Dr. A. B. Frank, Professor in the Royal Agricultural College, Berlin. With over 100 Illustrations. Cr. 8vo. 3*s.* 9*d.*

Botany, A Practical Introduction to the Study of: Flowering Plants. By J. Bretland Farmer, F.R.S., M.A., Professor of Botany in the Royal College of Science, London. With 121 Illustrations. Cr. 8vo. 2*s.* 9*d.*

Botany, The Treasury of. Edited by J. Lindley, M.D., F.R.S., and T. Moore, F.L.S. With 20 Steel Plates and numerous Woodcuts. Two Parts. Fcap. 8vo. 12*s.* 5*d.*

Botany, A Year's. Adapted to Home and School Use. By Frances A. Kitchener. With 195 Illustrations. Cr. 8vo. 5*s.* 3*d.*

Bulbs, The Book of. By S. Arnott. Together with an Introductory Chapter on the Botany of Bulbs, by Harry Roberts. Illustrated. Cr. 8vo. Cloth, 2*s.* 9*d.*

Bulb Growing, Pictorial Practical. Edited by Walter P. Wright. With numerous illustrations. Paper, 1*s.* 2*d.* Cloth, 1*s.* 9*d.*

Complete 12-page Catalogue sent post free on application to
H. G. COVE,
41, Wellington Street, Covent Garden, London, W.C.

NOW READY.

New & Enlarged Edition

OF THE

Calendar

OF

Garden Operations

Nearly 200 pp.,

Over 70 Illustrations.

A much enlarged edition of this book, of which 300,000 have been already issued, is now ready. It is based on the original work drawn up by the late SIR JOSEPH PAXTON, but has been repeatedly revised, and is now reconstructed and brought up to date by the Editor and Staff of the *Gardeners' Chronicle*. It is especially suitable for

Amateur Gardeners

as it forms a complete Elementary Treatise on Practical Horticulture and is well adapted for use by County Council Lecturers and their Pupils.

Price 6d., post-free 7½d.

Published by H. G. COVE, at the

"GARDENERS' CHRONICLE" OFFICES,

41, Wellington St, Covent Garden, W.C.

IMPORTANT ADDRESSES.

[Where a name is appended it is that of the Secretary.]

GARDENERS' CHRONICLE.

ADVERTISEMENTS and all BUSINESS LETTERS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, London, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London, W.C.**

English Arboricultural Society. — John Davidson, Estate Office, Haydon Bridge, Northumberland.
Royal Scottish Arboricultural Society.— Robt. Galloway, 19, Castle Street, Edinburgh.
Board of Agriculture and Fisheries.—4, Whitehall Place, London, S.W.
British Gardeners' Association.—W. Watson, Kew Road, Kew.
Entomological Society of London.—11, Chandos Street, Cavendish Square, W.
Fruit Growers' Federation (National).—A. T. Matthews, 6, Fairlawn Grove, Chiswick, W.
Gardeners' Royal Benevolent Institution.—Geo. J. Ingram, 175, Victoria Street, London, S.W.
Nurserymen, Market Gardeners', and General Hailstorm Insurance Corporation.—A. J. Munro, 42, Covent Garden, London.
Linnean Society.—B. Daydon Jackson, Burlington House, Piccadilly, London.
Nursery and Seed Trades' Association, Ltd.—W. J. Worrell, 30, Wood Street, Cheapside, London.
National Potato Society.—W. P. Wright, Postling Vicarage, Hythe, Kent.
Royal Agricultural Society of England.—Sir Ernest Clarke, M.A., F.S.A., 13, Hanover Square, London.
Royal Caledonian Horticultural Society. — P. Murray Thomson, 5, York Place, Edinburgh.
Royal Gardeners' Orphan Fund.—Brian Wynne, 30, Wellington Street, Strand, W.C.
Royal Horticultural Society.— Rev. W. Wilks, Royal Horticultural Hall, Vincent Square, London, S.W.
Royal Meteorological Society.—William Marriott, 70, Victoria Street, Westminster, S.W.
Scottish Horticultural Association.—P. Loney, 6, Carlton Street, Edinburgh.
United Horticultural Benefit and Provident Society.—William Collins, 9, Martindale Road, Balham, S.W.

SCALE OF CHARGES FOR ADVERTISING IN THE "GARDENERS' CHRONICLE."

Head-Line counted as Two Lines.	*s.*	*d.*
4 line space, about 20 words, single column	3	0
5 line space, about 28 " "	3	6
6 line space, or ½-inch, about 36 words, single column ...	4	0
1 inch, single column	7	0
2 inch, single column	13	0

and 6*s.* for every succeeding inch space.

If displayed across two columns	per inch	12	0
If displayed across three columns	per inch	20	0

minimum charge 20*s.* (two columns); minimum charge 30*s.* (three columns).

	£	*s.*	*d.*		£	*s.*	*d.*
Half Column ...	1	12	6	Half-Page	4	10	0
Column	3	0	0	Page	8	0	0

Discount allowed for a series.

Front Page (*No Display allowed*) 1*s.* per line space.

SITUATIONS WANTED.

26 *words, including Name and Address*, 1s. 6*d.*, *and* 6*d. for every additional* 8 *words or part of same.*

These Advertisements must be Prepaid, AND APPLY TO GARDENERS, &c., OUT OF EMPLOYMENT ONLY.

Advertisers may have replies to their Advertisements addressed to the "GARDENERS' CHRONICLE" Office, A Box-office fee of 6*d.* is charged for each advertisement, and replies are forwarded post free at the end of each day.

Stamps for amounts over 6d. will not be received. Halfpenny stamps should be sent for sums under 6d.

SUBSCRIPTIONS.

The United Kingdom	15*s.* per annum.
Abroad	17*s.* 6*d.* per annum.

P.O.O. to be made payable at Great Queen Street Post Office, W.C., to H. G. Cove, and sent to
41. WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.

THE GARDENERS' CHRONICLE
1905

[*The dates are kindly supplied by the Secretaries of the respective Shows, etc., but are in some cases liable to alteration.—Dec. 31, 1904.*]

JANUARY.

1	**S**	Surrender of Port Arthur 1905.
2	M	*Gardeners' Chronicle* first issued 1841. Bank Holiday in Scotland.
3	Tu	Roy. Hort. Soc. Coms. meet.
4	W	
5	Th	New moon 6h. 17m. p.m. Dividends due at Bank.
6	F	*Epiphany.* Old Christmas Day.
7	S	
8	**S**	*1st Sunday after Epiphany.*
9	M	United Hort. Ben. & Prov. Soc. Com. meet.
10	Tu	Penny post adopted 1840.
11	W	Sun rises 8h. 5m. : sets 4h. 13m.
12	Th	Hermann Wendland d. 1903.
13	F	Moon's first quart. 8h. 11m. aft. Brit. Gard. Assoc. meet. at Swansea.
14	S	Av. mean temp. at Chiswick 37·1°. Ann. Dinner Soc. Franc. d'Hortic. de Londres, Cafe Royal 6·30 p.m.
15	**S**	*2nd Sunday after Epiphany.*
16	M	Brit. Gard. Assoc. meet. at Cardiff. Birmingham and Mid. Counties Gard. Mut. Imp. Assoc. ann. meet.
17	Tu	
18	W	Brixton, Streatham and Clapham Hort. Soc. ann. meet.
19	Th	Linnean Society meet. Gard. Roy. Ben. Inst. ann. meet. and elect. of pensioners at Covent Garden Hotel at 3 p.m. Ann. Friendly Supper at 6 p.m.
20	F	
21	S	Full moon 7h. 14m. a.m.
22	**S**	*3rd Sunday after Epiphany.*
23	M	Spion Kop captured 1900.
24	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet.
25	W	Sun rises 7h. 52m. : sets 4h. 33m.
26	Th	Fall of Khartoum 1885.
27	F	Roy. Bot. Soc. meet.
28	S	Moon's last quart. 0h. 20m. a.m.
29	**S**	*4th Sunday after Epiphany.*
30	M	B'ham and Midland Counties M. I. Soc. meet.
31	Tu	C. H. Spurgeon d. 1892.

FEBRUARY.

1	W	Partridge and Pheasant shooting ends.
2	Th	*Candlemas.* Linnean Soc. meet.
3	F	
4	S	New moon, 11h. 6m. a.m. Soc. Franç. d'Hort. de Londres meet.
5	**S**	*5th Sunday after Epiphany.*
6	M	Sun rises 7h. 33m. : sets 4h. 55m.
7	Tu	
8	W	Half Quarter Day. Russo-Japanese war commenced 1904.
9	Th	
10	F	Roy. Gard. Orphan Fund ann. meet. and Elect. of Pensioners at Hotel Cecil, Strand.
11	S	London University founded 1826.
12	**S**	Moon's first quart. 4h. 20m. p.m.
13	M	Unit. Hort. Ben. and Prov. Soc. Com. meet. British Gard. Assoc. meet. at B'ham.
14	Tu	*St. Valentine.* Roy. Hort. Soc. Coms. meet.; also ann. meet. of Fellows.
15	W	Av. mean temp. at Chiswick 39·2°.
16	Th	Linnean Soc. meet.
17	F	Duchess of Albany b. 1861.
18	S	
19	**S**	*Septuagesima.* Partial Eclipse of the Moon, 5h. 45m. p.m.
20	M	Duchess of Fife b. 1867.
21	Tu	Cardinal Newman b. 1801.
22	W	George Washington b. 1732.
23	Th	Sun rises 7h. 1m. : sets 5h. 27m.
24	F	Roy. Bot. Soc. meet.
25	S	
26	**S**	*Sexagesima.* Moon's last quart. 10h. 4m. a.m.
27	M	B'ham and Midland Counties M. I. Soc. meet.
28	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet.

MARCH.

1	W	*St. David's Day.*
2	Th	Linnean Society meet.
3	F	
4	S	Soc. Franç. d'Hort. de Londres meet.
5	**S**	*Quinquagesima.*
6	M	New moon 5h. 19m. a.m. Eclipse of the Sun, invisible at Greenwich.
7	Tu	*Shrove Tuesday.*
8	W	*Ash Wednesday.*
9	Th	
10	F	King Edward VII. married 1863.
11	S	First London daily paper 1702.
12	**S**	*1st Sunday in Lent.*
13	M	Unit. Hort. Ben. and Prov. Soc. annual meet. at Caledonian Hotel, Adelphi, London, at 8 p.m. B'ham M. I. Soc. meet.
14	Tu	Moon's first quart. 9h. 0m. a.m. Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet.
15	W	Av. mean temp. at Chiswick 42·5°.
16	Th	Linnean Society meet.
17	F	*St. Patrick's Day.*
18	S	Hermann Herbst d. 1904.
19	**S**	*2nd Sunday in Lent.*
20	M	Charles Fisher d. 1902.
21	Tu	Full moon 4h. 56m. a.m. Spring quarter begins. Fellows of Royal Hort. Soc. decided to build Hall and Offices in Vincent Sq. 1902.
22	W	Roy. Bot. Soc. Show.
23	Th	
24	F	Roy. Bot. Soc. meet.
25	S	Lady Day.
26	**S**	*3rd Sunday in Lent.*
27	M	Moon's last quart. 9h. 35m. p.m. B'ham Mut. Imp. Soc. meet.
28	Tu	Roy. Hort. Soc.'s Coms. meet.
29	W	Liverpool Hort. Soc. Spring Show (2 days).
30	Th	Roy. Hort. Soc. Exh. of Colonial Fruits and Vegetables (2 days). Torquay Flower Show.
31	F	

APRIL.

1	S	Soc. Franç. d'Hort. de Londres meet.
2	**S**	*4th Sunday in Lent.*
3	M	Sun rises 5h. 33m. : sets 6h. 33m.
4	Tu	New moon 11h. 23m. p.m.
5	W	
6	Th	Linnean Soc. meet. Roy. Hort. Soc. of Ireland, Spring Show.
7	F	Old Lady Day.
8	S	Fire Insurance ceases.
9	**S**	*5th Sunday in Lent.*
10	M	Unit. Hort. Ben. and Prov. Soc. com. meet. B'ham M. I. Soc. meet.
11	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet. Devon Daf. and Spring Flower Show at Plymouth (2 days). Brighton Spring Flower Show (2 days).
12	W	Moon's first quart. 9h. 41m. p.m. Shropshire Hort. Soc. Spring Show.
13	Th	Av. mean temp. at Chiswick 47·3°.
14	F	Princess Beatrice b. 1857.
15	S	A. F. Barron d. 1903.
16	**S**	*Palm Sunday.*
17	M	B. Franklin d. 1790. B'ham M. I. Soc. meet.
18	Tu	
19	W	Full moon 1h. 38m. p.m. Roy. Bot. Soc. Show.
20	Th	Av. mean temp. at Chiswick 49·2°.
21	F	*Good Friday.*
22	S	Shakespeare b. 1564.
23	**S**	*Easter Sunday. St. George's Day.*
24	M	Bank Holiday.
25	Tu	Roy. Hort. Soc. Coms. meet. and Nat. Auricula and Primula Soc. Show combined. Mid. Auricula and Mid. Daf. Socs. Show at Birm. Bot. Gdns. (provisional).
26	W	Moon's last quart. 11h. 14m. a.m.
27	Th	Nat. Auricula Soc. (Northern Sect.) at Manchester (probably).
28	F	Roy. Bot. Soc. meet.
29	S	
30	**S**	*Low Sunday.*

MAY.

1	M	Bank Holiday (Scotland).
2	Tu	Royal Academy opens.
3	W	Av. mean temp. at Chiswick 52·2°.
4	Th	New moon 3h. 50m. p.m. Linnean Soc. meet.
5	F	Roy. Bot. Soc. lecture, 4 p.m.
6	S	Soc. Franç. d'Hort. de Londres meet.
7	**S**	*2nd Sunday after Easter.*
8	M	Unit. Hort. Ben. and Prov. Soc. Com. meet. Sun rises 4h. 22m. : sets 7h. 30m.
9	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. com. meet.
10	W	
11	Th	Roy. Gard. Orphan Fund Ann. Dinner at

JUNE.

1	Th	*Ascension Day.* Linnean Soc. meet. Brit. Gard. Assoc. estab. 1904.
2	F	Roy. Bot. Soc. lecture.
3	S	New moon 5h. 57m. a.m. Soc. Franç. d'Hort. de Londres meet.
4	**S**	*Sunday after Ascension.*
5	M	Sir Daniel Cooper d. 1902.
6	Tu	Sun rises 3h. 47m. : sets 8h. 10m.
7	W	Roy. Cornwall Show at Newquay (2 days).
8	Th	Av. mean temp. at Chiswick 59·2°.
9	F	Roy. Bot. Soc. lecture, 4 p.m.

JULY.

1	S	Soc. Franç. d'Hort. de Londres meet.
2	**S**	*2nd Sunday after Trinity.* New moon 5h. 50m. p.m.
3	M	Wm. Thompson (Ipswich) d. 1903.
4	Tu	Roy. Scottish Arboricultural Soc. Exh. of Forestry and Gen. meet. at Glasgow (4 days). Roy. Hort. Soc. Coms. meet. with Nat. Sweet Pea Soc. Show at Roy. Hort. Hall. Cambridgeshire Hort. Soc. Flower Show (probable).
5	W	Croydon Hort. Soc. Show. Hanley Hort. Fête (2 days). Tunbridge Wells Hort. Soc. Flower Show.
6	Th	Nat. Rose Soc. Exh. at Regent's Park.
7	F	Sun rises 3h. 53m. : sets 8h. 16m.
8	**S**	

AUGUST.

1	Tu	*Lammas.* New moon 4h. 3m. a.m. Roy. Hort. Soc. Coms. meet.
2	W	Mid. Carnation and Picotee Soc. Exhib. at Birmingham (probably). Chesterfield Hort. Soc. Show.
3	Th	Bank of England founded 1732.
4	F	
5	S	Soc. Franç. d'Hort. de Londres meet.
6	**S**	*7th Sunday after Trinity.*
7	M	Bank Holiday. Moon's first quart. 10h. 17m. p.m. Basingstoke Hort. Soc. Exh. Dudley Hort. Soc. Exh. (2 days). Seaham Harbour Hort. Soc. Exh.
8	Tu	

		Soc. lecture.
13	S	Av. mean temp. at Chiswick 52·7°.
14	S	*3rd Sunday after Easter.*
15	M	
16	Tu	
17	W	Roy. Bot. Soc. Show. Devon County Agri. Soc. Show, Exeter (3 days).
18	Th	Full moon, 9h. 36m. p.m.
19	F	Roy. Bot. Soc. lecture, 4 p.m.
20	S	Paris Internat. Hort. Exh. (9 days). Manchester Canal opened, 1894.
21	S	*4th Sunday after Easter.*
22	M	Av. mean temp. at Chiswick 55·3°.
23	Tu	Roy. Hort. Soc. Coms. meet. with Nat. Tulip Soc. Show.
24	W	Linnean Soc. Anniversary meet. Roy. Caledonian Hort. Soc. Spring Flower Show, Edinburgh (2 days).
25	Th	
26	F	Moon's last quart. 2h. 50m. a.m. Roy. Bot. Soc. lecture and meet. of Fellows.
27	S	
28	S	*Rogation Sunday.*
29	M	Annual Dinner of Kew Guild at Holborn Restaurant.
30	Tu	Roy. Hort. Soc.'s Show in the Temple Gardens, Thames Embankment, London (3 days). Bath and W. and S. Counties Societies Show at Nottingham (5 days).
31	W	Peace declared at Pretoria 1902. Derby Day.

11	S	*Whit Sunday.*
12	M	Bank Holiday. United Ben. and Prov. Soc. Com. meet.
13	Tu	Islington Cattle Market opened 1855.
14	W	Roy. Bot. Soc. Show and (proposed) Grand Exh. (3 days).
15	Th	Linnean Soc. meet.
16	F	Roy. Bot. Soc. lecture. Gard. Roy. Ben. Inst. Annual Festival Dinner at Hotel Metropole.
17	S	Full moon 5h. 52m. a.m.
18	S	*Trinity Sunday.*
19	M	
20	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Com. meet.
21	W	Yorkshire Gala, York (3 days).
22	Th	Summer Quarter begins.
23	F	Roy. Bot. Soc. lecture and meet. 4 p.m.
24	S	Moon's last quart. 7h. 46m. p.m. Midsummer Day.
25	S	*1st Sunday after Trinity.*
26	M	I. of Wight Rose Soc. Exh. at Ventnor.
27	Tu	Av. mean. temp. at Chiswick 62·4°.
28	W	Richmond Flower Show.
29	Th	Colchester Rose Show.
30	F	Prof. Huxley d. 1895. Roy. Bot. Soc. lecture.

		quart. 5h. 46m. p.m.
10	M	United Ben. and Prov. Soc. Com. meet. Fire Insurance ceases.
11	Tu	
12	W	Crimea evacuated 1856.
13	Th	
14	F	
15	S	*St. Swithin.*
16	S	*4th Sunday after Trinity.* Full moon 3h. 32m. p.m.
17	M	
18	Tu	Roy. Hort. Soc. Coms. meet. with Nat. Carnation and Picotee Soc. Show. Nat. Rose Soc. Show at Gloucester.
19	W	Northumberland, Durham and Newcastle Bot. and Hort. Soc. Show (3 days).
20	Th	Av. mean temp. at Chiswick 50·2°.
21	F	Battle of Bull's Run 1861.
22	S	Horticultural Hall opened by H.M. the King, 1904.
23	S	*5th Sunday after Trinity.*
24	M	Moon's last quart. 1h. 9m. p.m.
25	Tu	
26	W	Cardiff and County Hort. Soc. Exh. (2 days) (probably).
27	Th	Av. mean temp. at Chiswick 63·3°.
28	F	Roy. Bot. Soc. meet.
29	S	Sun rises 4h. 20m. : sets 7h. 52m.
30	S	*6th Sunday after Trinity.*
31	M	

10	Th	Roy. Bot. Soc. Anniversary meeting.
11	F	Half-Quarter Day.
12	S	Grouse shooting begins.
13	S	*8th Sunday after Trinity.*
14	M	*Old Lammas.* Unit. Hort. Ben. and Prov. Soc. Com. meet.
15	Tu	Full moon 3h. 31m. a.m. Roy. Hort. Soc. Coms. meet. Partial eclipse of the moon 2h. 39m. a.m.
16	W	Harpenden Hort. Show.
17	Th	Taunton Deane Hort. Soc. Show.
18	F	Emperor of Austria b. 1830.
19	S	Sheffield Flower Show.
20	S	*9th Sunday after Trinity.*
21	M	[20] Black Game shooting begins.
22	Tu	Av. mean temp. at Chiswick 61·3°.
23	W	Moon's last quart. 6h. 10m. a.m. Shropshire Hort. Soc. Show at Shrewsbury (2 days).
24	Th	Aberdeen Flower Show (3 days).
25	F	Sun rises at 5h. 2m. ; sets 7h. 2m.
26	S	
27	S	*10th Sunday after Trinity.* Dean Hole d. 1904.
28	M	
29	Tu	Roy. Hort. Soc. Coms. meet.
30	W	New moon 1h. 13m. p.m. Total eclipse of the sun 11h. 49m. a.m., partially visible. Bath Floral Fête (2 days).
31	Th	Av. mean temp. at Chiswick 60·1°. Day 13h. 36m. long.

SEPTEMBER.

1	F	Partridge shooting begins.
2	S	Soc. Franç. d'Hort. de Londres meet.
3	S	*11th Sunday after Trinity.*
4	M	
5	Tu	
6	W	Moon's first quart. 4h. 9m. a.m. York Dahlia Show. Glasgow and W. of Scotland Hort. Soc. Autumn Show (2 days).
7	Th	Nat. Dahlia Soc. Show at Crystal Palace (2 days).
8	F	Geo. Canning d. 1827.
9	S	Sun rises 5h. 26m. : sets 6h. 28m.
10	S	*12th Sunday after Trinity.*
11	M	Unit. Ben. and Prov. Soc. com. meet. Av. mean temp. at Chiswick 57·4°.
12	Tu	Roy. Hort. Soc. Comms. meet. and Veg. Show.
13	W	Roy. Caledonian Hort. Soc. International Exh. at Edinburgh (3 days). Full moon 6h. 10m. p.m.
14	Th	President McKinley d. 1901.
15	F	
16	S	
17	S	*13th Sunday after Trinity.*
18	M	Dr. Johnson b. 1709.
19	Tu	Av. mean temp. at Chiswick 56·7°.
20	W	Battle of the Alma 1854.
21	Th	Moon's last quart. 10h. 14m. p.m.
22	F	
23	S	Autumn Quarter begins.
24	S	*14th Sunday after Trinity.*
25	M	Lucknow relieved 1857.
26	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. Autumn Show (2 days) and Nat Dahlia Soc. Com. meet. in Royal Hort. Hall.
27	W	
28	Th	New moon 10h. 0m. p.m.
29	F	Michaelmas. Quarter Day.
30	S	Earl Roberts b. 1832.

OCTOBER.

1	S	*15th Sunday after Trinity.*
2	M	[1] Pheasant shooting begins.
3	Tu	Av. mean temp. at Chiswick 54·4°.
4	W	Nat. Chrys. Soc. Exh. (2 days) (provisional). Brixton, Streatham, and Clapham Hort. Soc. general meeting.
5	Th	Moon's first quart. 0h. 54m. p.m.
6	F	
7	S	Soc. Franç. d'Hort. de Londres meet.
8	S	*16th Sunday after Trinity.*
9	M	Unit. Hort. Ben. and Prov. Soc. Com. meet. Sun rises 6h. 15m. : sets 5h. 19m.
10	Tu	Roy. Hort. Soc. Show of British-grown Fruit (3 days). Nat. Rose Soc. Com. meet.
11	W	Transvaal War commenced 1899.
12	Th	Old Michaelmas Day.
13	F	Full moon 11h. 3m. a.m.
14	S	Fire Insurance ceases.
15	S	*17th Sunday after Trinity.*
16	M	Dr. Trimen d. 1896.
17	Tu	Av. mean temp. at Chiswick 49·8°.
18	W	Roy. Bot. Soc. Show.
19	Th	Dean Swift d. 1745.
20	F	
21	S	Moon's last quart. 0h. 51m. p.m.
22	S	*18th Sunday after Trinity.*
23	M	C. F. Bause d. 1895.
24	Tu	Roy. Hort. Soc. Coms. meet.
25	W	Battle of Balaklava 1854.
26	Th	Av. mean temp. at Chiswick 46·5°.
27	F	Pres. Roosevelt b. 1858.
28	S	New moon 6h. 58m. a.m.
29	S	*19th Sunday after Trinity.*
30	M	[29] Hare hunting begins.
31	Tu	All Hallows Eve.

NOVEMBER.

1	W	Nat. Chrys. Soc. Exh. (3 days) (provisional). Cambridgeshire Hort. Soc. Chrys. Show in Corn Exchange, Cambridge (2 days, probably). Brixton and District Hort. Soc. Show (probably). Kent County Chrys. Soc. Sh. (2 days).
2	Th	Colchester Autumn Rose Show. Torquay Autumn Flower Show.
3	F	Sun rises 6h. 59m. : sets 4h. 29m.
4	S	Moon's first quart. 1h. 39m. a.m. Soc. Franç. d'Hort. de Londres meet.
5	S	*20th Sunday after Trinity.*
6	M	
7	Tu	Roy. Hort. Soc. Coms. meet. Nat. Rose Soc. com. meet. Croydon Chrys. Show (2 days). Belfast Hort. Show (2 days). Birmingham and Mid. Counties Chrys. Exh. (3 days). W. of Eng. Chrys. Show at Plymouth (2 days).
8	W	Cardiff Chrys. Show (2 days). Ascot Hort. Soc. Chrys. &c., Show (2 days).
9	Th	King's Birthday.
10	F	Nottingham and Notts. Chrys. Soc. Exhib. (2 days). Bradford Chrys. Show (2 days). Sheffield Chrys. Show (2 days). Leicester Chrys. and Fruit Show (2 days).
11	S	*Martinmas.* Burton-on-Trent. Chrys. Exh.
12	S	*21st Sun. aft. Trin.* Full moon 5h. 11m. a.m.
13	M	Unit. Hort. Ben. and Prov. Soc. Com. meet.
14	Tu	Rev. A. Foster-Melliar d. 1904. South Shields & N. Counties Chrys. Soc. Exhib. (2 days).
15	W	Roy. Bot. Soc. Show. York Chrys. Show (3 days). Liverpool Chrys. Show (2 days).
16	Th	Edinburgh Chrys. Show (3 days). Barnsley Chrys. Show (2 days).
17	F	Aberdeen Chrys. Exh. (2 days).
18	S	Av. mean temp. at Chiswick 41·5°.
19	S	*22nd Sunday after Trinity.*
20	M	Moon's last quart. 1h. 34m. a.m.
21	Tu	Roy. Hort. Soc. Coms. meet. Leeds Paxton Soc. Exh. (2 days).
22	W	Sun rises 7h. 29m. : sets 4h. 1m.
23	Th	
24	F	Roy. Bot. Soc. meet.
25	S	
26	S	*23rd Sun. aft. Trin.* New moon, 4h. 47m. p.m.
27	M	
28	Tu	Av. mean temp. at Chiswick 41·4°.
29	W	
30	Th	*St. Andrew's Day.*

DECEMBER.

1	F	Queen's Birthday.
2	S	Soc. Franç. d'Hort. de Londres meet.
3	S	*Advent Sunday.* Moon's first quart. 6h. 38m. p.m.
4	M	
5	Tu	Roy. Hort. Soc. Coms. meet.
6	W	Nat. Chrys. Soc. Exh. (2 days) (provisional). Sun rises 7h. 50m. : sets 3h. 50m.
7	Th	Nat. Rose Soc. annual meet. and dinner.
8	F	Alfred Outram d. 1899.
9	S	George Washington d. 1799.
10	S	*Second Sunday in Advent.*
11	M	Unit. Hort. Ben. and Prov. Soc. Com. meet. Full moon 11h. 26m. p.m.
12	Tu	Robert Browning d. 1889.
13	W	
14	Th	Prince Consort d. 1861.
15	F	Roy. Bot. Soc. meet.
16	S	Av. mean temp. at Chiswick 40·7°.
17	S	*Third Sunday in Advent.*
18	M	
19	Tu	Moon's last quart. 0h. 9m. p.m. Roy. Hort. Soc. Coms. meet.
20	W	Philip Crowley d. 1900.
21	Th	St. Thomas. Shortest day.
22	F	Winter Quarter begins.
23	S	Sun rises 8h. 6m. : sets 3h. 52m.
24	S	*Fourth Sunday in Advent.*
25	M	*Christmas Day.*
26	Tu	Bank Holiday. New moon 4h. 4m. a.m.
27	W	Av. mean temp. at Chiswick 37·0°.
28	Th	Innocents' Day.
29	F	W. E. Gladstone b. 1809.
30	S	Various licences expire.
31	S	*First Sunday after Christmas.*

3d. **PUBLISHED EVERY FRIDAY, AT 41, WELLINGTON STREET, COVENT GARDEN, LONDON, W.C.** **3d.**
Price 3d.; Post-free, United Kingdom, 3½d.; Twelve Months, 15s.; Foreign, 17s. 6d.
P.O.O. to be made payable to H. G. COVE *at the Post Office,* GREAT QUEEN STREET, LONDON, W.C. *Cheques should be crossed* "DRUMMOND."

Supplement to the "Gardeners' Chronicle," January 7, 1905.

CHESTER & ELAM,

Rope, Line and Twine Manufacturers,
and Gardeners' Sundriesmen.

IMPORTERS OF PAPER, RAFFIA, ARCHANGEL AND ST. PETERSBURG MATS.

OPAQUE FLORAL GUM, *Acknowledged to be the Best now in the Market, is Specially Prepared and to be obtained only from us.*

Waggon Ropes,
Garden Lines,
Sash Lines,
Tomato String,
Loin Cloths,
Horse Cloths,
Van Covers,
Hessian,
Pea Bags,
Potato Bags,
Chaff Bags,
Nose Bags,
Corn Sacks,
Coal Sacks,
Punnetts,
Cart Grease,
Halter Reins,
Dandy Brushes,
Curry Combs,
Wadding,
Corn Sieves,
Bass Brooms,
Garden Sticks,
,, Labels,
,, Gloves,
,, Netting,
Bamboo Canes,
Lichen Moss,

Saynor's Budding and Pruning Knives, &c.

Florist's Wire of Every Description. **Regulation Cart and Van Lamps.**

Agents for WHEEN'S AXLE GREASE. VAN LAMP OIL.

Before buying, write for Samples and Prices. Special Quotations to Large Buyers.

33, Great Queen Street, Holborn
(Two minutes from Covent Garden Market), LONDON.

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge.

THE
Gardeners' Chronicle

No. 941.—*SATURDAY, Jan.* 7, 1905.

CONTENTS.

Almanac for 1905 (Supplement)
Apple Annie Elizabeth 6
Apple Cornish Gilliflower 6
Apples, colour in ... 12
Asparagus, Sprengeri, flowering spray of ... 10
Bauhin's, Gaspard, herbarium 9
Books, notices of—
  A Gardener's Year ... 9
  Botanical Magazine... 9
  Journal of the Kew Guild 8
  Landscape Gardening 3
  Willing's Press Guide 9
Calla, "soft-rot" disease of the 9
Carnations at Worth Park 13
Carnations Glacier and Mrs. S. J. Brooks ... 13
Chrysanthemum audit, a 14
Cucumber spot disease 13
Dahlia, The Mikado ... 13
Ephedra, the genus ... 13
Events in 1905 8
Eucharis culture ... 13
Fog, effects of, on plants at Kew... ... 12
Fossil plants 12
Gardeners, the training of young 14
Hooker, Sir Joseph Dalton 8
Foreign correspondence—
  Notes from Japan ... 10
Jasminum primulinum 14
Kew, effect of recent fogs on plants at ... 12
Laurel-wreath, the ancient victor's 14
Lilium Glehni 3
Lily of the Valley, poisonous character of . 13
Novelties in Orchids during 1904 1
Nursery notes—
  Veitch, J., & Sons, Chelsea 5
Pear Passe Crassane ... 11
Pentstemons, new varieties of 11
Plants, new or noteworthy—
  Acanthus Perringi ... 2
Plants, vanishing ... 9
Potato - judging from cooked tubers ... 2, 9
Potato Up-to-Date ... 2
Societies—
  Gardeners' Debating. 16
  Royal Horticultural. 14
Solanum jasminoides... 16
South Africa, horticulture in 4
Spiræa Billardi 12
Statices at Teneriffe ... 9
Trees and Shrubs—
  The handling of seedlings 10
Week's Work, the—
  Flower garden, the... 7
  Fruits under glass ... 7
  Hardy fruit garden... 6
  Kitchen garden, the. 6
  Orchid-houses, the ... 7
  Plants under glass ... 7
Wood ripening on north walls 13

ILLUSTRATIONS.

Asparagus Sprengeri in flower 10
Bullock, A., portrait of 7
Clarke, W. H., portrait of 6
Dendrobium triflorum (cymbidioides) 15
Fyfe, W., portrait of 6
Gardening by natives in the Transvaal 5
Hooker, Sir Joseph Dalton, a portrait of (Supplementary Illustration)
Jordan, F., portrait of... 7
Lilium Glehni 3
Miller. W. A., portrait of 7
Pear, Passe Crassane 11
South African native gardeners, a group of 4
Young, W. H., portrait of 7

NOVELTIES OF 1904.

ORCHIDS.

HOME-RAISED hybrids steadily gain ground over newly-introduced species, and the best evidence of their popularity is to be found in the fact that the majority of awards made by the Orchid Committee of the Royal Horticultural Society have during the past year been given to such hybrids. The production of such a wealth of floral beauty as that already evolved by the hybridist has been an eminently good work, whereby not only has each section of Orchids dealt with been recruited by flowers having great variety of form and colour, but, by intercrossing, the duration of the flowering season, and especially that of autumn and winter, has been prolonged.

From the Right Honourable Lord **ROTHSCHILD**, Tring Park (gr., Mr. A. Dye), came two of the finest species of the year, viz., the wonderful Angræcum infundibulare, which received a First-class Certificate (the first award made at the new Hall), and the beautiful Angræcum Rothschildianum, which was given an Award of Merit. Fine hybrids from the same garden were Lælio-Cattleya × Dominiana, L.-C. × Martineti, and Cattleya × Patrocinii, all distinguished as Tring Park varieties.

From his very extensive botanical collection the Hon. **WALTER ROTHSCHILD** received Botanical Certificates for Restrepia leopardina rosea, R. aspasicensium, Cryptophoranthus Lehmanni, Masdevallia Burbidgeana, Saccolabium gracile, and others.

Captain G. L. **HOLFORD**, Westonbirt, Tetbury (gr., Mr. Alexander), whose collection is one of the best cultivated, received awards for Cypripedium × aureum Œdippe, a very massive flower; C. × triumphans magnificum and C. × Niobe Westonbirt variety, a model flower, finely coloured, and which was awarded a First-class Certificate. Also the graceful Cymbidium × Ballianum, the bright rose-coloured Lælio-Cattleya × Digbyano-Mossiæ Westonbirt variety; and Cattleya × Iris Westonbirt variety.

NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), great in fine spotted Odontoglossums, has shown many promising varieties of that class, but nothing approaching the beauty of his O. crispum Cooksoniæ. The awards fell to Odontoglossum crispum Clive, O. c. Harold, O. c. Sibyl, O. c. Kinlesideanum, and O. c. xanthotes Cooksoniæ, grand additions to blotched-flowered class; O. × ardentissimum Cooksoniæ, heavily marked with claret-purple; and O. × Andersonianum Crawshayanum. Mr. Cookson also received awards for Cypripedium × W. R. Lee Oakwood variety, and C. × Dom Carlos, a very distinct hybrid between C. Godefroyæ leucochilum and C. Lawrenceanum.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), whose collection contains many remarkable varieties, and who has the most complete collection of hybrids in which Cypripedium Fairieanum has been used directly or indirectly, in the country, is credited with awards for Cypripedium × Wellesleyanum (bellatulum album × concolor), the finest of the class, with the yellow colour and purple spotting of C. concolor; C. × King Edward VII., a very stately C. Rothschildianum and nitens magnificum cross; Lælia anceps Schroderæ var. Theodora, Lælio-Cattleya × bletchleyensis Mrs. Francis Wellesley, and Cattleya labiata Mrs. Francis Wellesley, both charming, delicately-tinted flowers.

Sir **TREVOR LAWRENCE**, Bart. (gr., Mr. W. H. White), has, as usual, flowered a number of interesting novelties in species and hybrids during the past year. Three of the most remarkable of the species were the singular leafless trailer with showy yellow and purple flowers, Vanilla Humbloti; the elegant little Gomesa Binoti, and the handsome purplish-crimson Sobralia Ruckeri, for which a First-class Certificate was awarded, May 17. One of the best of the hybrids was Cypripedium × Sanderiano-selligerum, shown at the last meeting of the year.

H. T. **PITT**, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), the owner of some of the best and most valuable spotted Odontoglossums, adds to his already long list of honours in that class with Odontoglossum crispum Prebendary Bevan, a fine purple-spotted flower; O. c. xanthotes Snow Queen, pure white with a few orange-coloured spots; and O. cirrosum Pittianum, a very large form which secured a First-class Certificate. Also Cattleya Warscewiczii Rosslyn variety, of one shade of rose-pink.

G. F. **MOORE**, Esq., Bourton-on-the-Water (gr., Mr. Page), the exhibitor of the record group for which a Gold Medal and the Lindley Medal was given, secured awards for Cypripedium × aureum virginale, C. × Graceæ "W. H. Page," C. × Thompsoni, C. × Miss Blanche Moore, and C. insigne sylhetense giganteum, all fine flowers; also Cattleya × Portia Chardwar variety and Lælio-Cattleya × Pallas magnifica.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), the Odontoglossum specialist, has for his best of 1904, Odontoglossum × waltoniense rosefieldiense, a pale-yellow flower with some brown blotches; O. crispum Venus, a noble variety of the typical class, and O. crispum Theodora, finely blotched with red-purple. Better than any of these however is the beautiful O. crispum De Barri, shown March 9, but kept in reserve until perfected.

J. **WILSON POTTER**, Esq., Croydon (gr. Mr. W. H. Young), scored with the finely spotted Odontoglossum crispum Rosendale and O. Uro-Skinneri splendens.

Sir **FREDERICK WIGAN**, Bart. (gr. Mr. W. H. Young), among other good things, produced Lælio-Cattleya × Constance Wigan, a pretty bright yellow flower, with reddish-rose markings on the lip. And other amateurs have contributed to the garden gains of the year.

F. W. **MOORE**, Esq., the Curator of the Royal Botanic Gardens, Glasnevin, Dublin, has done much to sustain the interest in botanical Orchids at the Royal Horticultural Society. At the first meeting he was awarded four Botanical Certificates, and others were obtained at subsequent meetings, some of the most interesting subjects, such as Bulbophyllum Hamelini and B. Weddelli being illustrated in the *Gardeners' Chronicle*, and references will be found in the appended list of plants illustrated.

NURSERYMEN.

Messrs. **SANDER & SONS**, of St. Albans and Bruges, have been highly successful, and have received Awards for some of the best Orchids of the past year. Their magnificent Cypripedium × Fred K. Sander is considered the best C. bellatulum cross yet raised, and their C. × Helen II. var. Fascinator and the other forms of the same batch are fine acquisitions. Other remarkable and showy hybrids credited to be firm are Lælio-Cattleya × Hy. Greenwood var. Imperator, a finely-coloured and very large flower; L.-C. × Luminosa "The Mikado," L.-C. × Mme. M. Fournier var. W. H. Young, L.-C. × Martineti Sunrise, L.-C. × eximia Sanderæ, L.-C. × crispo-brosa, all remarkably fine; Cattleya × G. W. Law-Schofield, C. × triumphans, the pretty white C. labiata "Miss Kate Brazier," Cypripedium callosum Sanderæ "Hye's variety," a better flower than the old form, and with more white in the petals, and Zygopetalum × Gottianum, one of the darkest in colour. During the past year Messrs. **SANDER & SONS** have successfully imported many desirable Orchids, by far the best of which is Cymbidium Parishii Sanderæ, a noble ivory-white flower with labellum heavily marked with violet-purple.

Messrs. **CHARLESWORTH & CO.**, of Heaton, Bradford, have been among the most successful exhibitors of the past year. Their certificated plants of the year are mainly fine forms of hybrids which the firm have previously shown. Of these two very handsome examples were given among a host of other fine hybrids staged by Messrs. Charlesworth at the last Temple Show, viz., Lælio-Cattleya × Fascinator King Edward VII., and L.-C. × Canhamiana, Rosslyn variety. L.-C. × Haroldiana magnifica, is finely coloured; L.-C. × Digbyano-Mossiæ Queen Alexandra, the first pure white hybrid of L. Digbyana; L.-C. × Cappei Charlesworthii, L.-C. × Myra Charlesworthii, and L.-C. × Illustris, distinct and good. The beautiful and prolific batch of Cattleya × Iris, already honoured with awards, produced three additional good novelties in C. × Iris aurifera, "Prince de Piedmont," and "Fascinator." Other good novelties certificated to Messrs. Charlesworth were Cattleya × F. W. Wigan superba, C. × Rosa Leemann, and Odontoglossum crispum xanthotes Charlesworthii, by far the best of its class in the form of its flowers, their clear white, and the attractive arrangement of the light-yellow spotting, which is the only colour in the flower.

Messrs. JAS. VEITCH & SONS, Chelsea, have for their best Dendrobium × Thwaitesiæ, Veitch's variety, the largest and finest Dendrobium of its class, with clear buff-yellow flowers having a purple disc to the lip; Sophro-Cattleya × Saxa, and Lælio-Cattleya × Mona, two pretty hybrids; and their importations being Cymbidium Wilsoni and other interesting Orchids.

Other good Orchids of the year were Odontoglossum Pescatorei Kathleen, of Messrs. MCBEAN; Cattleya labiata reedleyensis, and C. l. Mrs. G. H. Muller, of Messrs. HUGH LOW & Co.; and Cattleya Mossiæ alba, Tracy's variety, and the fine Cypripedium × Tracyanum, of Mr. H. A. TRACY.

CONTINENTAL NOVELTIES.

M. CHAS. VUYLSTEKE continues to be the best supporter of Continental interests at the Royal Horticultural Society's shows. This year he staged at the Temple Show a number of very pretty hybrid Odontoglossums, several of which obtained awards, and with them × Odontioda Vuylstekeæ (O. Pescatorei × Cochlioda Noezliana), one of the most remarkable and beautifully-coloured hybrids ever raised.

M. A. A. PEETERS, of Brussels; M. JULES HYE DE CROM, M. BERANEK, of Paris (Cypripedium × Rolfei superbum), and Mr. OTTO BEYRODT, of Marienfelde, Berlin, also showed good novelties, the Cattleya Warscewiczii Madame Melanie Beyrodt being the most beautiful "white gigas," with rose-crimson lip.

The Marquis DE WAVRIN, Chateau de Ronsele, Ghent, also showed some novel hybrids flowered in a remarkably short time.

The following new and rare Orchids have been illustrated in the *Gardeners' Chronicle* in 1904:—

Aërides crispum, August 20, p. 134.
Angræcum infundibulare, Supp., August 20.
Bulbophyllum Hamelini, August 20, p. 124.
Bulbophyllum Weddelli, December 3, p. 382.
Calanthe discolor, June 18, p. 389.
Coryanthes speciosa, August 13, p. 106.
Cymbidium Parishii var. Sanderæ, May 28, p. 338.
Cymbidium Wilsoni, March 5, p. 157.
Cattleyas (Mr. McBean's), Supp., May 7.
Cattleyas (Rothschild's), Supp., February 27.
Cypripedium × F. K. Sander, Oct. 29, p. 307.
Cypripedium × Rolfei superbum, Dec. 10, p. 399.
Cypripediums, winter-flowering, April 2, p. 213.
Cypripedium insigne Oddity, Dec. 24, p. 444.
Cynorchis purpurascens, April 9. p. 227.
Dendrobiums, hybrid, March 26, p. 197.
Dendrobium × melanodiscus gloriosum, April 2, p. 219.
Dendrobium nobile virginale, June 4, p. 357.
Dendrobium × Thwaitesiæ Veitch's variety, April 23, p. 274.
Dendrobium Williamsoni, May 28, p. 341.
Dendrobium bellatulum, August 13, p. 114.
Epidendrum elegans, January 30, p. 66.
Hæmaria Dawsoniana, June 18, p. 387.
Lælia purpurata Queen Alexandra, June 4. p. 363.
Lælio-Cattleya × bletchleyensis Ruby King, Supp., February 6.
Odontoglossum crispum de Barri, March 26' p. 196.
Odontoglossum crispum Boltoni, July 16, p. 34.
Odontoglossum × ardentissimum Cooksonæ, April 23, p. 260.
Odontoglossum Pescatorei Kathleen, April 9, p. 228.
Odontoglossum Pescatorei, five varieties, February 27, p. 131.
Odontoglossum, group of spotted, April 23, p. 261.
Odontoglossum × Vuylstekei vivicans, Jan. 2, p. 8.
Odontoglossum × waltoniense rosefieldiense, May 21, p. 381.
Odontoglossum nebulosum Gurney Wilson, June 4, p. 356.
Odontioda × Vuylstekeæ, June 4, p. 360.

(To be continued.)

NEW OR NOTEWORTHY PLANTS.

ACANTHUS PERRINGI, *Siehe.*

I DISCOVERED this beautiful new species in 1903 in the Cappadocian Anti-taurus, and have so far propagated it as to be now able to place it on the market. It grows on cliffs, in dry, chalky loam, and in barren places at a height of from 5,000 to 6,000 feet above sea level. The winter climate is extremely cold, the snow often lying from three to four months. The handsome spike of flowers makes its appearance about the end of June. In England the plant should be grown upon rockeries where it can have the necessary dry situation. The roots are creeping and form rhizomes. Leaves sessile, from 5 to 6 inches long, lancet-like, tapering, often deeply toothed and notched, and set with spines. Stem clothed with short hairs. The plant is from 1 to 1½ foot high, and is almost entirely covered with large, handsome, decussate, rosy-red flowers. The bracts are large, ovate, pointed, and sharply indented. They are provided with spines. The bracteolæ are narrow and lanceolate. The upper sepal is entire, broadly ovate, nearly as long as the corolla; the lower one is also broad but smaller, and bi-partite above. The inner sepals are very narrow and lanceolate. The corolla is bright rose-coloured, with three lobes. The bracts and sepals are silvery-green streaked with rose-colour. The plant is closely allied to Acanthus Dioscoridis, according to Boissier's description. The differences are that the leaves of Acanthus Perringi are grey-green instead of bright green. The stem is very short and the leaves sessile. The stem leaves are extremely broad and arranged in an oval, not a circular form. They are somewhat broader than the root-leaves. The bracts are broad and ovate; the lower sepal is broad and not narrow or linear in shape. *W. Siehe, Mersina, Turkey-in-Asia.*

POTATOS.

UP-TO DATE.—The reputation of this well-known variety has lately been assailed in some quarters, but with us we find it still one of the most desirable varieties, for out of nine distinct kinds grown under field culture this one has given most satisfaction as regards weight of crop, disease-resisting capabilities, and edible qualities when cooked. After all considerations, it is the soil that is the determining factor with regard to flavour in a Potato. In localities situated even a few miles apart, one often finds that a particular Potato that is giving satisfaction in the one district is a failure in the other district; but to condemn a variety as worthless and only fit for pigs, as one or two correspondents have recently done, is, to my mind, too sweeping an assertion. I am forwarding half-a-dozen tubers of Up-to-Date to be tested when boiled or baked. Not only are they of excellent quality now, but they will be equally good up to the month of May. *J. Mayne, Bicton Gardens, Devonshire, December.* [Excellent. ED.]

QUALITY OF COOKED POTATOS.

The interesting cooking tests to which Potatos were recently subjected by Messrs. Dobbie & Co. at Marks Tey, Essex, and which showed the Scotch tubers generally to be inferior in quality to those from Lincoln and Essex, open up some interesting themes for enquiry, first, as to whether tubers of varieties that ripen later do really become drier and of better quality when cooked two or three months after lifting than they are at the time of lifting. As to this matter we have no assured tests by which to guide us. Generally it is held that such is the case, and it is much to be hoped that the Scotch varieties subjected to the cooking test on the 13th ult. be again tried with Essex tubers six weeks later. Seeing that we need Scotch tubers for consumption from January onward, to defer such a further test till the spring is certainly undesirable. As Mr. Cuthbertson is as deeply interested in Scotch tubers as in those grown in Essex, the fullest reliance may be placed in his trials. But a further subject for enquiry may be found in the connection, if any, between the comparatively greater sappiness of Scotch Potatos, as the Essex trial seems to have evidenced, and their undoubted greater strength and robustness as seed tubers when planted in the south. There seems to be no fact in relation to Potatos that is more assured than is the one that Scotch-raised tubers give far better growth and crops south than South-of-England-raised tubers do. Do Potatos become more starchy prematurely down south than they do in the north, and is starchlessness more promotive of growth than is sappiness? Were that the case we in the south should find second-growth tubers, always more sappy or watery than first-growth tubers, to make much the best seed. Why Scotch-grown tubers generally produce the best growth and crops southwards is so far an unsolved problem. *A. D.*

Of the many exhaustive tests of Potatos recently made in various directions, the cooking tests conducted by Mr. Cuthbertson are probably one of the most valuable series yet issued. Too often it seems to me, and more especially in recent years, has it been taken for granted that, given a heavy weight per acre and a large and often unhandsome tuber, the necessary quality is also present. Yet it is a curious thing to note in connection with this most recent test, that no mention is made of a variety which is admitted to be the finest quality Potato extant, and which is making a better price on the London markets than any other variety, and this not on account of any thing but because of the demand by that expert judge "the cook." I refer to Langworthy, which is now selling at from 20s. to 30s. per ton more than can be obtained for other ware. The following extract from the letter of a large grower in Scotland is interesting:—"Notwithstanding the amazing cheapness of Potatos, my 'Langworthy' is selling in London at this moment at 90s. per ton. I cannot understand why growers should potter away with gross bulky tubers when this fine Potato is still at its best." And those English growers who know something of this variety will fully endorse this remark. Amongst other varieties one notices that the record of "Factor" is uniformly good, and maintains its reputation as an excellent all-round Potato. The demand for Scotch seed of this (Langworthy) and Chas. Fidler, which also maintains a good place in this test, is increasingly great, and points to a tendency on the part of growers to secure top returns by having the best. Many samples of Langworthy from the district from which my Scotch cargoes are drawn (Dunbar) are, as a matter of fact, making £5 per ton and over at the present time on the London markets. *R. W. Green, Wisbech, December 28.*

BOOK NOTICE.

LANDSCAPE GARDENING. By Samuel Parsons, Junr. (London: C. P. Putnam's Sons.)

The intention of this book (written primarily for the denizens of the United States) is "to stimulate interest in an inexpensive style of landscape gardening by enunciating a few fundamental principles, and giving an account of some well-laid-out grounds." The laying out of the "lawn," or, as we should say, the garden, and the construction of roads and paths, form the subjects of the earlier chapters. Roads and paths are considered as necessary evils, and really the roads leading to the house concern the architect and the engineer as much as the gardener; the smaller by-ways, however, come strictly within the province of the gardener, who should know how to dispose them to the best advantage, and specially how to avoid their unnecessary multiplication and frivolous and worrying turns and twists. The appropriate trees and shrubs then come under review, the author of course studying the "environment" as it is manifested in the northern and eastern United States. In the Morningside Park, New York, for instance, a whole hillside is systematically planted, on account of their rich colour in autumn, with White Dogwood, Cornus florida, Andromeda arborea, Liquidambar, Scarlet Maple, Rhus Osbeckii, &c. At other points groups of spring-flowering or of summer-blooming trees are arranged so that the beauties belonging to each season are brought into prominence.

The author further considers the question of massing trees and shrubs in some situations, and in others of placing them apart where their distinctive features may be seen unencumbered by surrounding trees.

The remarks on pruning are eminently judicious, and the directions for the treatment of slopes, the formation of rockwork, the proper use of herbaceous plants are replete with hints which the gardener may profitably consider. The selection of trees and shrubs for particular purposes is both extensive and appropriate. It indicates how large a choice is offered to the connoisseur and at the same time shows the restricted area from which the ordinary gardener gets his material. The remarks on bedding-out plants and their proper use are sensible and devoid of exaggeration, and the details, relating alike to small surburban gardens, town squares, and large parks, may be read with great profit.

The book is well printed, has a good index, and is copiously illustrated. Some of the illustrations are new, but others are old friends which have done duty in other publications. We may strongly commend the book to the notice of our readers.

LILIUM GLEHNI.*

The illustration of Lilium Glehni at fig. 1 has been prepared from a plant which I found growing on the railway embankment near Asahigawa, in the centre of Hokkaido (Yezo), on July 17, 1904.

In a paper by Dr. K. Miyabé and the Rev. John Batchelor in the *Transactions of the Asiatic Society of Japan*, vol. xxi., p. 231, this plant is said to be known to the Ainos as "Umbairo," and to be used extensively for food. The bulbs are washed, pounded in a mortar, and the finer part of the flour (called "irup"), after drying, is made into gruel, with millet or rice. The coarser part is boiled, pounded, and when rotten made into large cakes. The plants as I saw them were usually 4 to 5 feet high, with six to eight flowers or less, but the specimen figured was exceptionally fine, and had twenty-four flowers of a pale-yellow with reddish streaks.

In the same district, on wooded slopes, and generally in deep shade, I found Lilium avenaceum, which is a much handsomer plant, with two to eight flowers on a stem, like those of a small Tiger Lily; but the bulbs are so fragile and brittle that they are very difficult to collect, and, though also eaten by the Ainos, are rarely cultivated in Japan. These were the only Lilies I saw in the island of Hokkaido, though L. dahuricum is also common on sandy beaches and river banks in some localities.

Lilies do not seem to be by any means so common or generally distributed in Japan as I had supposed. The only species I saw growing wild were L. auratum, L. tigrinum, and L. cordifolium, of which L. Glehni appears to me to be hardly more than a northern variety, and a slender form of tigrinum, which I take to be L. Maximowiczii. The bulbs of tigrinum are commonly used as food, and when baked or boiled are not at all bad eating with a little salt and butter.

I was rather disappointed with the wild flowers of Japan on the whole. There are some fine terrestrial Orchids which are difficult to collect in a condition to send to England, and would be difficult to cultivate. Almost the only very desirable plant that I saw which I have not had in cultivation was Shortia uniflora, which was very abundant in the dense shady forest of Sciadopitys verticillata and Thujopsis dolabrata, in one place in the Central Alps at about 3,000 feet elevation. Though the flowers are larger than those of Shortia galacifolia, they seem to be much less freely produced (at least in the shade of the

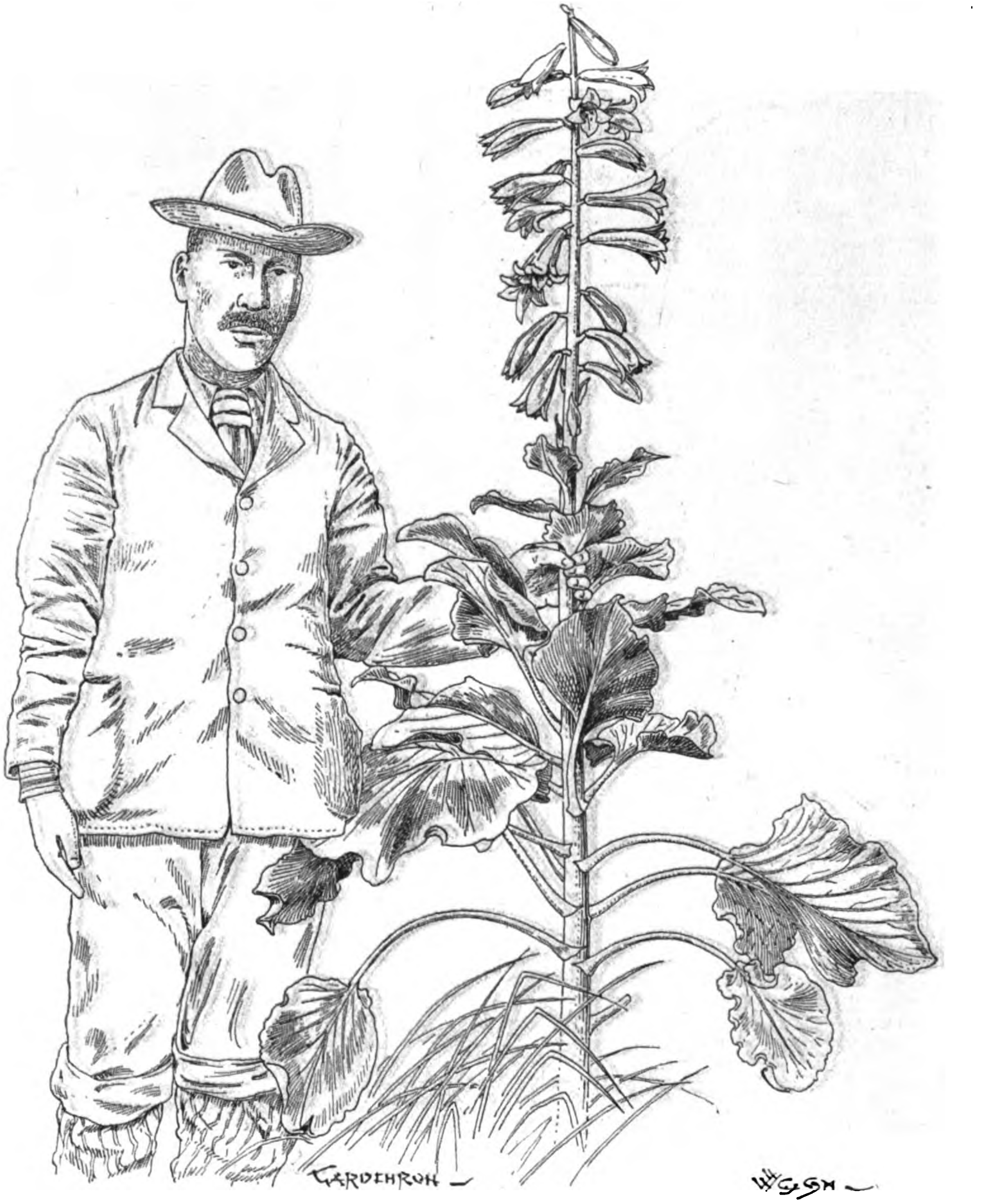


FIG. 1.—LILIUM GLEHNI, FROM YEZO.

---

* *L. Glehni*, Schmidt, *Reis. Amur*, 187.

forest), where the plant formed large spreading tufts. Schizocodon soldanelloides, which grows abundantly higher up, is probably the most interesting of the Alpine plants, and the occurence of Diapensia lapponica, found on the Yatsu-ga-take by Mr. Atkinson is very interesting. Conandron ramondioides, which I saw on wet sandstone rocks in the Kisogawa Valley, at about 2,000 to 3,000 feet, is also a very curious and beautiful plant, and is easy to grow in pots in a cold greenhouse, as it goes completely to rest in winter. Plants sent me from Japan five or six years ago have increased considerably in size. Alpine plants, though cultivated to some extent by a few amateurs in Japan, are not long-lived in gardens owing to the tropical heat of the summer, and are not so numerous or varied as in the Alps, Himalayas, and the Altai mountains, or on Mount Tacoma in Washington, which I visited on my way back to St. Louis in August. *H. J. Elwes, Colesborne.*

FORESTERS' DIARY. — Webster's *Foresters' Pocket Diary and Note-Book* has been issued by W. RIDER & SON, 164, Aldersgate Street. It is a most convenient little publication, containing in addition to a diary just the sort of information that the busy man wants, whether in the woods and nurseries or at the desk. An index further helps the reader to find what he wants.

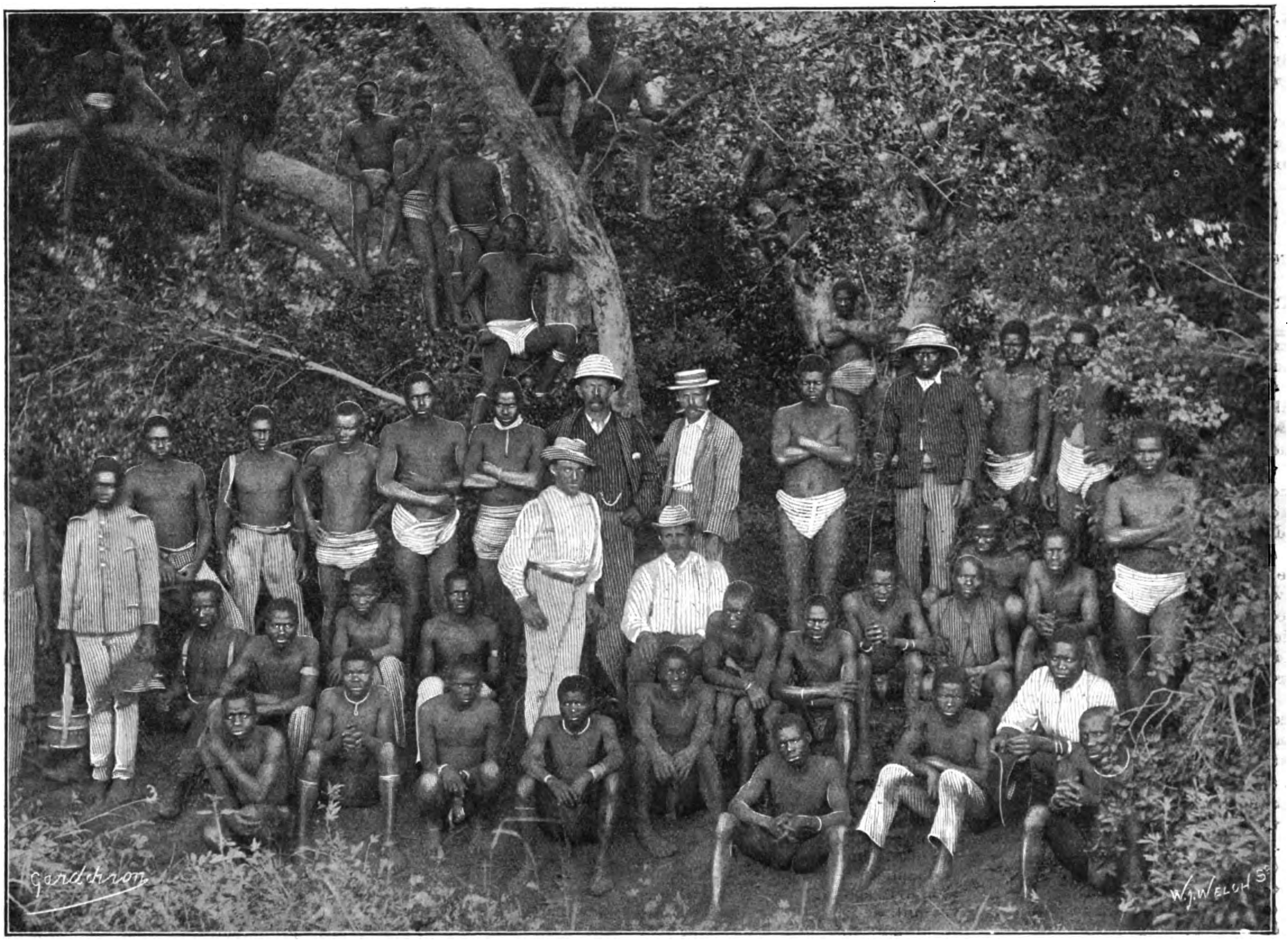


FIG. 2.—THE GARDEN STAFF AT "IRENE," TRANSVAAL.

HORTICULTURE IN SOUTH AFRICA.

A BEAUTY SPOT IN THE TRANSVAAL.—"Where, in the name of goodness, is Irene?" you ask. "A beautiful name; but is it also a beautiful place?" Irene, I may say, is a sometime notable spot in the Transvaal, on the direct road between Johannesburg and Pretoria, near to the latter place. It stands on the Rand high veldt, at a lower altitude than the Golden City, and is some 5,000 feet above mean sea-level.

A beautiful name "Irene" certainly is, and a very beautiful garden also, seeing that the Transvaal as a whole cannot by any means be called beautiful. Grand and awe-inspiring, with a wonderfully fertile soil, the high veldt, the goldfields of South Africa, is now denuded of all its indigenous woodlands, and is chiefly a waterless and dusty waste, except in the river-beds around Zeerust and Potchefstroom. A notable place, Irene, because here dwelt the late A. Hugo Nelmapuis, a founder, if not the finder, of the Transvaal Goldfields, called the Rand (Witwatersrand or White Waters Reef). Here, then, at Irene, Mr. Nelmapuis, the pioneer of the Gold Reef, built his house, and desired to lay out his grounds in a well-watered valley—at that time, when gold was first discovered, a treeless and a barren veldt waste.

The house was easily designed and erected where funds were plentiful; but not so easily were the grounds to be laid out and planted. Mr. Nelmapuis being then in Europe, looked around to find, if possible, a suitable landscape-gardener, and hearing that a clever young German was then at the Orchid nurseries of Messrs. Sander, St. Albans, who had received his earlier experience in the French gardens and nurseries, sent for him, and finding him efficient, with ideas of his own, engaged Mr. Fuchs and despatched him at once to the scene of his future work in the Transvaal, to begin the laying out of the grounds at Irene.

Mr. Fuchs amusingly refers to his work and wages when Mr. Nelmapuis, fortunately for both, found him at the St. Albans nurseries. He was there, he says, receiving 14*s.* per week, and his living cost him 19*s.* Probably his wage was larger than he could have got in the French gardens and nurseries, but not so his living, which is provided at a less cost on the Continent than in England. But the serious part of the business was that he was spending in England 5*s.* per week more than he earned, so a change as quickly as possible was certainly desirable, although I have no doubt that the English practice Mr. Fuchs obtained was more than worth the 5*s.* weekly loss.

Irene then arose under Mr. Fuchs's skilful work, and became in a few years a Paradise, as trees and plants where water is in the Transvaal grow and thrive very quickly, a five-years' Transvaal growth being equal to an English growth (even in Devon or Cornwall) of twenty or more years, as witness the recent wonderful covering-up of the Johannesburg suburbs, which only five or six years ago were but bare veldt, a barren and desolate land indeed.

But the Irene estate as Mr. Fuchs left it some ten years ago was magnificent. Irene is now in other hands, and it has, I regret to say, much degenerated, being used as a semi-nursery, badly managed, as half nurseries and half pleasure-grounds generally are, neither the one nor the other being made the best of. Mr. Nelmapuis, alas! died too soon, and the family having left for Europe, Irene was sold, and Mr. Fuchs left in order to establish his present prosperous business in Johannesburg at the Rand Nurseries and the Henwood's Arcade Floral Depot. He is undoubtedly the Rand Decorator, and as much sought after by the wealthy magnates of the Rand for decorative work as he is esteemed by them, for all his work is of a high class, and he well deserves success.

Mr. Fuchs is a bachelor, and lives at his villa at the nurseries of some 200 acres in extent, beyond Sansouci, and dispenses hospitality there with a free and generous hand. Mr. Fuchs had the honour to present personally a bouquet of Transvaal Orchids to Mr. and Mrs. Chamberlain on the occasion of their visit to Johannesburg in 1903 (see *Gardeners' Chronicle*, March 21, 1903, p. 179, fig. 75); and the late Colonial Secretary and his charming wife drove out to see Mr. Fuchs's nursery, and were delighted with what they saw. It was on that visit that Mrs. Chamberlain said to Mr. Fuchs, "And you surely do not always intend to remain without a wife in this lovely spot?" "But, Madam, I am too happy and busy here, and too well looked after by Madam my housekeeper to desire to alter my mode of life," was Mr. Fuchs's answer. *Alfred Chandler, F.R.Met.Soc., F.R.H.S.*

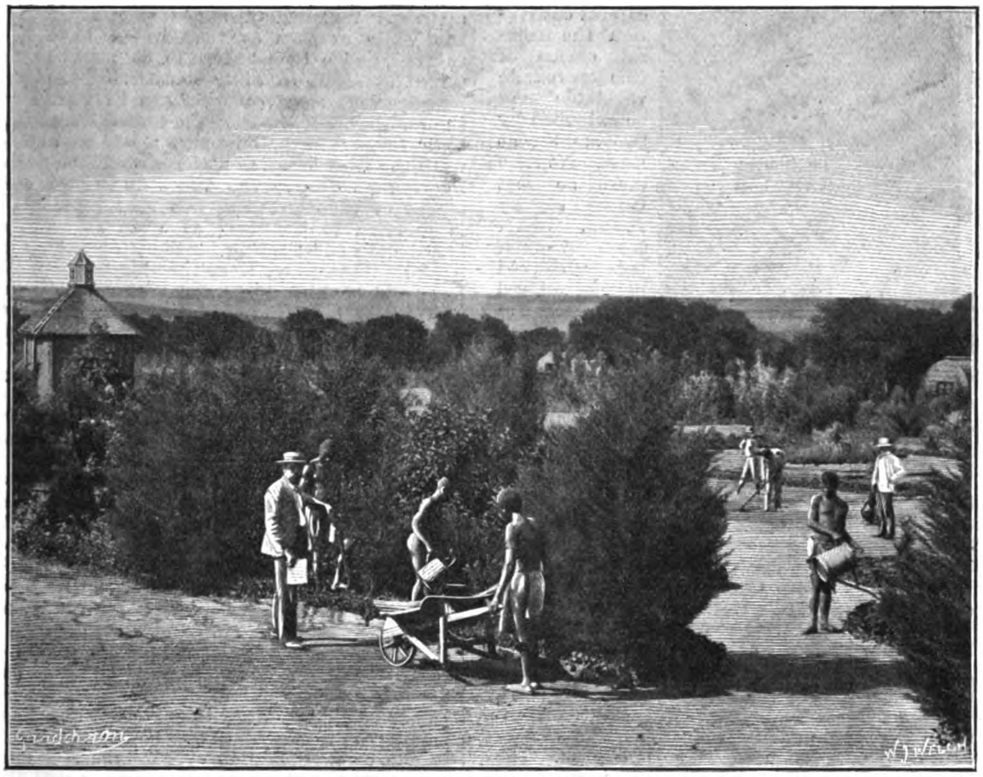


FIG. 3.—MR. FUCHS DIRECTING THE KAFFIR "BOYS" IN THE GARDENS AT "IRENE," TRANSVAAL.

NURSERY NOTES.

PLANTS IN BLOOM AT MESSRS. J. VEITCH AND SONS.

As the years advance so do the species of plants, mostly of recent introduction, which come naturally into flower at this "dead" season, or are made so to do under a régime of forcing after suitable preparation. One form of this is retardation in cool chambers, as in the case of Lily of the Valley and Lilac.

Taking the cool show house first on the occasion of a visit paid to the nursery on Monday, December 19, I found it very gay with Camellias, small plants of about 2 feet in height each carrying from three to six flowers of mostly large size, which is unusual in small young plants. One of the more conspicuous is the old C. Chandleri elegans, a flower of more than ordinary size, fairly full, light rose in colour mottled with white; also Baronne Lequay, white striped with rose colour; imbricata Madame Hovey, and other favourite varieties (the foliage of these plants was all that could be desired). Among other plants in bloom were the comparatively new Lindenbergia grandiflora, a species having an almost continuous flowering habit and numerous yellow flowers of the same tint as that of Celsia cretica; Salvia splendens, many specimens of Daphne indica rubra, some choice Cyclamens of the grandiflora type; beautifully-flowered neat examples of Azalea indica as globular-headed standards of 1½ ft. to 2 ft. high, including the favourite Deutche Perle, the best for bringing into bloom at this season, and several Ericas, viz., melanthera, hyemalis, and gracilis; Roman Hyacinths, Lily of the Valley, nicely bloomed; Christmas Roses showing some few flowers, and giving promise of a good succession; some finely-fruited small specimens of Aucuba japonica vera, and one pyramidal-trained plant covered with fruits just ripening of Cratægus Pyracantha Lelandi. A few Tree-Carnations added colour but not discernible fragrance to the whole.

The warm show, otherwise rockery, house afforded specimens in fine flower of Jacobinia (Justicia) coccinea, J. chrysostephana with showy orange-coloured flowers, Reinwardtia tetragyna, Caraguata ligulata splendens (the bracts of a vivid scarlet tint), Euphorbia (Poinsettia) pulcherrima, and the rich purple-flowered Lasiandra.

It was noted that the warm-house plants generally are grown at this season, and indeed always, at a lower degree of temperature than was at one time considered by cultivators advisable, with the advantages of more endurable conditions for those inspecting or working among them, greater freedom from insects, sturdier growth, and a lessened coal bill.

The Codiæum (Croton) house contained an admirable assortment of highly coloured plants of sizes suitable for table adornment and indoor use generally where small things are desirable. A grand lot of Aspidistra lurida variegata was remarked. One of the transformed pits of old time, now a commodious span-house, was filled with "table plants," including well-grown and coloured examples of Dracænas, such as Flamingo, Mayii, Prince Manouk Bey with narrowish, erect leaves of a deep red tint; the showy norwoodiensis Jamesi, with narrow leaves of a reddish-crimson tint, a variety of Australian origin, and others.

In another similarly reconstructed house were a capital lot of Eucharis amazonica now beginning to open their flowers; of Aralia Veitchii gracillima, A. leptophylla, reticulata, and other species of these graceful plants suitable for table uses, &c. The singular-looking Urceolina aurea and several specimens of Nægelia exoniensis, whose showy scarlet flowers make it so valuable as a decorative plant at this season, were observed. Of Pandanus Veitchii numerous small examples occurred in this and other houses. It is a plant that is very generally in use, as are also the varieties of Rex Begonias.

The more noteworthy varieties of the winter-flowering section of Begonia consisted of Agatha, resembling in general aspect the better known Gloire de Lorraine, but having larger and richer-coloured flowers, and more compact in habit. The blooms last well, and withstand London fogs better than any other variety. Mrs. Heal, one of the finest of this section, was observed in some quantity, possessing a height of 2 to 3 feet, robust, with almost orbicular leaves, and very stout stems. The peduncles carry from five to seven and nine flowers each, 3 inches in diameter, of a fine carmine touched with scarlet. Some of the plants observed had been in bloom since early October. Winter Cheer, another of this section, was observed splendidly in flower, the trusses massive, and consisting of numerous scarlet flowers of about 3 inches in diameter. The plant grows and flowers well in 5 and 6-inch pots. Winter Perfection, a bright rose-pink-flowered variety, has charming semi-double flowers of the same size as the last named. It is a sturdy, erect, free-flowering, beautiful variety. Julius has flowers of a faint pink shade suffused with white, resembling those of a double Nerium Oleander. Ensign has a rosy-crimson flower, and the habit of growth of Winter Cheer. Those of the above-named varieties were struck from cuttings taken in August last. Plants of Coleus thyrsoideus, 3 feet in height, and each main growth terminated with a spike of bright blue flowers, were struck in July. Some plants of Moschosma riparium were smothered with their white, Spiræa-like spikes of flowers. Plants of Epiphyllum truncatum in variety coming into bloom were noted.

Of Javanico-jasminiflorum hybrid Rhododendrons I noted Cloth of Gold, golden-yellow flowers in bold trusses; Princess Beatrice, pale yellow suffused with pink: Mrs. Heal, the only pure white variety; Princess Alexandra, white with a faint blush tinge; Hercules, a large flower of a deep yellow tint; and Little Beauty, red flowers, small growing, excellent for forming sprays.

In the Orchid-houses the following were noted in bloom—Cypripedium insigne Harefield Hall variety, C. Hitchinsianum, C. Spicerianum, C. Prospero, C. Sedeni, Lælia Olivia × = L. crispa × L. xanthina, the flowers forming a pleasing combination of primrose and pink tints; Lælio-Cattleya Proteus, a cross between L. cinnabarina and Cattleya amethystoglossa; L.-C. luminosa = Lælia tenebrosa and Cattleya aurea; L.-C. Bryan, a cross from C. Gaskelliana and L. crispa, a fine large truss, the lip of rare brightness, the flower coming out splendidly under artificial light.

The stock of Lælias, Vandas, Cattleyas Trianæ and labiata, now housed in the once show greenhouse, are looking the picture of healthy vigour; but nothing was noted in flower among them. *F. M.*

FRUIT REGISTER.

APPLE ANNIE ELIZABETH.

I AM forwarding you examples of this excellent late-keeping Apple, taken from the fruit-room at Wentworth House to-day. You will observe the flesh is extremely solid, and for market purposes should be one of the best varieties, being of suitable size and of good appearance. Mr. H. E. Edwards, gr., Wentworth House, Mill Hill, N.W., speaks very highly of this Apple. As grown ordinarily on the northern heights of Finchley, it proves a good cropper, the fruits are of useful size, and keep good for a very long time. The flesh is excellent when cooked. If kept till March the fruits are not at all unsuitable for dessert purposes. *Stephen Castle, December* 19. [Six excellent specimens of this well-known Apple accompanied the above letter. ED.]

I send you herewith a few fruits of Apple Cornish Gilliflower. They are from orchard-grown trees on grass, and the fruits find great favour with my employer, as also do Cox's Orange Pippin, Adam's Pearmain, Braddick's Nonpareil, Old Nonpareil, Sturmer Pippin, and Allen's Everlasting, with Devonshire Quarrenden and Lady Sudeley for consumption early in the season. Another good early variety that one scarcely ever sees mentioned out of Cornwall is Lucomb or Pince's Seedling, ripening about the same time as Lady Sudeley. King of Tompkin's County succeeds well with us, and in most seasons is grandly coloured, but, like King of Pippins, Wyken Pippin, Blenheim Pippin, Allington Pippin, and Worcester Pearmain find but little favour here as dessert varieties. *Philip R. Murton, The Gdns., Penrose Helston, Cornwall, December* 21.

[The large fruits of Cornish Gilliflower have a rough exterior that is not specially inviting in a dessert Apple, but the flavour is very good indeed and distinct from that of most other varieties. The flesh is very firm and not juicy. Probably the fruits would have been even better a fortnight earlier. ED.]

PEACH SNEED, OR EARLIEST OF ALL,

is figured and described in the *Revue Horticole* for December 16. This is an American variety which ripens its fruits one or even two weeks earlier than any other variety.

"THE HORTICULTURAL DIRECTORY FOR 1905."—As this is the forty-sixth annual edition it is not necessary to do more than mention the fact, as all business men will, like ourselves, know of its value from daily use.

The Week's Work.

[At the beginning of a new year, we have, in accordance with our usual practice, made certain changes in our weekly Calendar. Our object is to lay before our readers each week practical directions written by men of acknowledged pre-eminence in their several departments, and who are in actual practice. In our present issue it will be of interest to give the portraits of those who have kindly consented to write the Calendar for the present year. To those who have retired we tender our thanks for the services they have rendered. ED.]

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peas.—By a proper selection of varieties and careful cultivation the natural season of this favourite vegetable may be extended by two months at least. No time must be lost before sowing seeds. Fill some 4-inch pots with old potting soil, and sow at least five Peas in each pot. Use sufficient pots to provide plants for the supply under glass, and for planting-out in the open border in March. Those to be forced under glass should be put near to the glass in heated pits, admitting air whenever practicable to do so, and those for planting-out in March may be placed in cold frames. The varieties we have found best here for this purpose are Chelsea Gem, and of taller varieties Sutton's Giant, Veitch's Early Marrow, and Edwin Beckett, handsome podded varieties. Last season I formed a very favourable opinion of Carter's May Flower. At the same time as sowing the seeds in pots we make our first sowing, weather permitting, in the open garden upon a south border previously prepared. The variety used is Exonia, which grows 3½ feet high. The drills are made of sufficient depth to allow of some leaf-soil, wood-ashes, stable-droppings, old potting-soil and soot, all mixed together and in dry condition, to be put into the drill before and after the seeds are sown. The drills are made about level with this compost, and are then covered with the ordinary soil taken from the drills. When sowing at this season we employ double the quantity of seeds we should use in spring, and if considered necessary the plants are thinned out subsequently.

Onions.—Immediate preparations should be made for this crop by deep cultivation and liberal applications of manure. If this be done no change of soil will be necessary, for during the last ten years I have grown Onions on the same ground, and yet get bulbs from 2 to 3½ lb. in weight. But in order to secure this object the seeds must be sown now, and for this purpose we use clean pots 3 inches in diameter. These are filled with light, moderately rich soil made pretty firm, and a few seeds are dropped in the centre of each pot. The pots are then placed in a temperature of 50° to 55°, and kept near to the glass. The best variety for this purpose is a well-selected variety of Ailsa Craig. Magnum Bonum and Crimson Globe should be grown for supplying variety. When seeds are sown in the open garden during March, I find Veitch's Main Crop to be the best variety. This variety may also be sown now in boxes, placed in cold frames, and transplanted in the spring.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pot Vines will now be in various stages of growth, and the details in their cultivation must be given attention at the proper time. Especial care has been necessary recently owing to dense fogs and other adverse climatic conditions, but satisfactory progress will have been made if the excellent advice given by my predecessor in the Calendar in the *Gardeners' Chronicle* for 1904 has been faithfully followed. In gardens where fruit is required at an early date, light and rich top-dressings of good fibrous loam with some approved Vine-manure added should be given the Vines as soon as the Grapes have been thinned, and a temperature of 68° may be maintained at night in mild weather, especially in houses where some covering can be placed over the roof-lights to conserve the heat. Excessively high temperatures, however, must be avoided until the fruit is set, as nothing would be gained by trying to hurry the Vines during the early stages of their growth. See that tepid water is supplied to the roots as often as required, occasionally substituting for the clear water some weak liquid-manure. Keep the atmosphere moist, but avoid damping the floors too frequently in dull or wet weather, rather add fresh fermenting material where this is used, and if it be turned repeatedly this will help to keep up the necessary degree of moisture. Those Vines which are now approaching the flowering stage should be afforded a temperature of 65° at night, which may vary a few degrees more or less according to the condition of the weather. A rise by day of 10° or 15° with sun-heat may be permitted. Admit a little air for a short time on all favourable occasions, but prevent cold draughts. The atmosphere should be slightly dryer during the time the Vines are in flower, and it will be necessary to tap the rods lightly in the brightest part of the day in order to distribute the pollen. Tie the shoots into position as they increase in length, stopping them at two joints beyond each bunch, and removing those shoots that will not be required for supplying the necessary degree of shade. Later Vines that have only just commenced to grow must be watered with extreme care. Cease to syringe them as soon as the buds have broken evenly into growth, but supply the necessary moisture by damping all other available spaces in the house.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

A good Beginning.—During the last weeks of the old year we have had one of the worst visitations of fog that has occurred in my Orchid-growing experience. The effects of this will be disagreeably apparent for a long time to come. It is at such periods that the suitability or otherwise of the houses and compartments used for Orchid cultivation is proved. Too many beginners, on deciding to form a collection, utilise ordinary plant or Cucumber houses, without paying much regard to the necessary conveniences for providing efficient ventilation, atmospheric moisture, and good light, and then if a fair amount of success is not attained, the venture ends either in disappointment or in the discharge of the *employé*. A skilful grower may contrive to grow his plants under adverse circumstances, but give him suitable houses, erected in the best position obtainable, and he alone is then to blame if the very best results are not secured. There are, however, one or two circumstances which are beyond the cultivator's control, such as local and climatic conditions, and these will to a large extent influence the growth of his plants. Orchid-houses should be erected on the south side of a high wall, or in such a position as will afford protection from northerly winds. They should be compact, and run from the north to the south, so that the plants on each side may share in the daily sunshine. The houses should be of moderate height only, and have a roof-angle of about 45°. Ample means of ventilation are necessary both in the walls and roofs. Sufficient water-pipes should be provided to furnish the requisite degree of warmth without having to unduly heat the pipes. That atmospheric moisture may be fairly constant and arise naturally from the floors, these should be made of coke-breeze or suitable refuse from the stokeholes. Any brickwork needed inside should be constructed with good porous bricks, using as little cement as possible. Tanks for the collection and storage of rain-water are needed, but if they extend beneath the stages any distance they should be covered over, excepting here and there for dipping a supply from. Double stages are almost always essential, the lower one to be covered with moisture-holding material, and the upper one, 4 to 6 inches above, made of laths an inch or so apart. With houses combining the foregoing essential characteristics, a good beginning will have been made.

Temperatures, &c.—During the shortest days much work other than cleaning cannot be undertaken, and so long as the temperatures are properly regulated, water intelligently afforded to such plants as need it, and the requisite degree of humidity maintained in the atmosphere, the plants should pass satisfactorily through the dull season. As a guide the following figures should be approximately maintained during this month and February, always allowing the temperatures to decrease when severe frosts or cold winds prevail, and raising them proportionately during mild weather: *Stove or East Indian-house*, 65° by day, 60° by night; *Cattleya and Mexican-houses*, 60° by day, and 55° by night; *Intermediate-house*, 58° by day, and 53° by night; *Masdevallia-house*, 55° by day, and 50° by night; *Odontoglossum-house*, 53° by day, and 48° by night. These are temperatures to be promoted solely by fire-heat, and a considerable rise may be allowed during the daytime when arising from solar-heat.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to the Countess BECTIVE, Underley Hall, Westmoreland.

Improvements.—This is a suitable time of the year to make alterations and improvements. The flower gardener will have his notes of successes and failures obtained last summer to refresh his memory and aid him in his endeavour to secure improvement. In all departments this is most likely to result from simplicity of arrangement, and an endeavour to copy Nature in her most pleasing features.

Fencing.—See that the fence enclosing the flower garden is proof against vermin. If galvanised-wire-netting is used, and requires replacing with new, it may be well to know that instead of burying it 9 inches in the usual way it is quite as satisfactory to bend at right angles about three-quarters of a foot, and fasten level with the ground with wooden pegs a yard or so apart. The wire soon embeds itself in the grass, and does not rust for many years.

Shrubberies.—Press forward with the grubbing and blasting of roots, trenching, wheeling, and all similar operations in readiness for the planting season. Shrubs for winter effect are now at their best, and when planted in the best manner are very satisfactory. On a sunny bank a group of Rubus biflorus (the Whitewashed Bramble) is very effective associated with Picea pungens glauca, Cryptomeria elegans, Cotoneaster frigida (well berried), and Cornus sanguinea, with Bamboos for a background. Pinus sylvestris aurea is the brightest of the golden-coloured shrubs. Golden Hollies, Taxus fastigiata aurea, T. baccata aurea, Cupressus Lawsoniana Smithi, Retinospora plumosa aurea, and Diplopappus chrysophyllus (Cassinia fulvida) follow in the order named.

Transplanting Shrubs.—When regulating shrubberies there are always some specimens worth moving, and good-sized trees with proportionate balls can be easily transplanted with every prospect of success by using a mason's bogie in lieu of a transplanting machine. Prepare the ball, say 3 feet in diameter, then have four stout boards a little longer than the width of the bogie, and secure these well underneath the ball at front, back, and sides by wooden blocks and bricks at each corner, bearing in mind the width of bogie. Keep the tree perpendicular, raise each corner alternately, and undermine the ball. Now that the boards have got the weight, prepare an inclined path, and run the bogie underneath; reduce the pillars till the bogie has its load, then with levers and a steady pull the tree will be raised out of the hole. Having decided on a position in which to replant the tree, make a hole and path, run the bogie down, block up the boards to relieve the bogie, then lower the ball of the roots to the proper level, ram good soil underneath. take away blocks and boards, use friable soil amongst the roots, and the tree will be firmly and expeditiously planted.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant, Oxon.

Even in the winter months there is much work to occupy the attention of the grower of hardy fruits, such as tree planting, manuring, pruning, staking, nailing, training, and the destruction of lichen and insect pests by spraying, &c. Each of these operations will be given attention in this column in due course.

Planting Fruit-trees.—This is one of the most important items in successful fruit cultivation. Where it has been delayed in some localities owing to frost and snow, the work should be proceeded with as expeditiously as possible immediately the soil is found to be in such a condition that it can be satisfactorily worked. A great many failures in fruit growing are the result of stunted growth, canker, &c., that follow "slipshod" planting. It will pay well to do this work thoroughly and skilfully. The natural conditions of the site and soil are the first considerations. In some low-lying gardens where there are no practical means of draining, effective measures should be taken to prevent the roots growing down into a cold and wet subsoil. A quantity of broken bricks, lime-rubble, slates, or concrete placed at the bottom of not too deep a hole, and well rammed together, will answer this purpose. Where the subsoil consists of chalk, the foregoing remarks are also essential, otherwise if the roots are allowed to descend into the chalk a sickly-looking tree will result, and it will need to be lifted and replanted. Before proceeding to plant the tree trim all damaged roots by making an upward cut, and from the apex of each root new roots will grow. If the soil at the time of planting is in a rather wet condition, a quantity of old potting soil and burnt refuse should be worked well amongst the root-fibres, the main roots being laid out at right angles from the tree and covered at varying depths, making the whole firm by means of treading with the foot, and filling up with the staple soil, leaving it rough and untrodden on the surface. In all cases it is of the utmost importance to secure the trees to a stake, and in the case of wall-trees to so fasten them that they cannot be blown about. It is best to plant to the stake, and there is then no risk of injuring the roots by driving the stake in after planting. There is sure to be a natural settlement of the soil, and the trees should not be secured finally until this has taken place. Do not bury the roots more deeply than they were when growing in the nursery, the mark of which will be seen on the stem of the trees. Where a plantation of cordon Apple-trees on Paradise-stocks is contemplated for supplying large fruits for exhibition purposes, they may be advantageously planted on slightly raised mounds, allowing a space of 4 feet between the rows, the intervening space to be heavily mulched with manure in the summer time. Instead of staking each tree, two wires strained to supports at either end is all that is necessary for making the trees secure.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Necessity for Light. — At this time of the year, when fog and dull sunless weather are so frequent, too much importance cannot be attached to the admission of all the light obtainable for plants, whether grown for their foliage or for flowers. This can only be done by keeping the glass and woodwork of the houses thoroughly clean and sweet.

Stove containing fine Foliage Plants.—Maintain by fire-heat a temperature of 65° by night with a rise of 5° by day, but allow the temperature to fall a little lower in very severe weather in order to avoid heating the pipes excessively. Keep plenty of moisture in the atmosphere by damping the floors and the surfaces between the pots, &c., but use the syringe sparingly over the plants during very dull weather. Little or no advantage is gained by commencing to propagate plants too early in the season, but where specimen Codiæums (Crotons) are required propagation may now be proceeded with, selecting only strong healthy plants for this purpose. The method known as "ringing" is the best. Care should be taken in this operation not to cut deeper than the rind in taking out the ring of bark, also in tying the moss round, for the wood being very brittle it is easily broken and the advantage this method should possess is then lost.

Stoves with Flowering Plants.—At this season the utmost care is required in the watering of plants particularly of those that require a warm temperature to develop their flowers perfectly. Keep a moderately dry atmosphere and a temperature of 60° by night. Only under the most favourable conditions should air be admitted to the house, and only sufficient then to allow the damp air to escape. Begonia Winter Cheer, B. Ensign, B. Mrs. John Heal and others of this type having flowered, steps should be taken to ensure them a thorough rest. Gradually withhold water from the roots as they show signs of resting, but on no account allow them to become dust-dry, and for this reason they should always be under the eye of the man in charge. They must not be placed where the temperature falls below 55°.

APPOINTMENTS FOR JANUARY.

MONDAY,	JAN. 9	United Hort. Ben. and Prov. Soc. Com. Meet.
FRIDAY,	JAN. 13	British Gard. Assoc. Meeting at Swansea.
SATURDAY,	JAN. 14	Ann. Dinner Soc. Franç' d'Hort. d'Londres, Café Royal' 6.30 P.M.
MONDAY,	JAN. 16	British Gard. Assoc. Meeting at Cardiff. Birmingham and Mid. Counties Gard. Mut. Imp. Assoc. Ann. Meeting.
WEDNESDAY,	JAN. 18	Brixton and District Hort. Soc. Ann. Meeting.
THURSDAY,	JAN. 19	Linnean Soc. Meet. Gard. Roy. Ben. Inst. Ann. Meet. and Elect. of Pensioners at Covent Garden Hotel, at 3 P.M.; Ann. Friendly Supper at 6 P.M.
TUESDAY,	JAN. 24	Roy. Hort. Soc. Coms. Meet. Nat. Rose Soc. Com. Meet.
FRIDAY,	JAN. 27	—Roy. Bot. Soc. Meet.

SALES FOR THE WEEK.

MONDAY, JANUARY 9—
Hardy Border Plants, Roses, Azaleas, American Plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

WEDNESDAY, JANUARY 11—
Continental Plants, 2,400 Roses, Fruit Trees, &c., at 67 & 68, Cheapside, E.C., at 12 o'clock. Enormous consignment of 3,800 cases of Japanese Liliums, including 147,640 L. auratum, 147,480 L. sp. album and rubrum, 100,000 Palm Seeds, 50,000 Tuberoses, and a great variety of other Bulbs, at 67 and 68, Cheapside, E.C., at 3 o'clock 14 Greenhouses, Piping, Boilers, and Stock, at the Hollisfield Nursery, Firs Lane, Winchmore Hill, by order of Mr. C. E. Town, at 12 o'clock. By Protheroe & Morris.

FRIDAY, JANUARY 13—
Rhododendrons, North American Plants, Gladioli, Spiræas, &c., at 67 and 68, Cheapside, E.C., at 12 o'clock; Imported and Established Orchids. at 67 & 68 Cheapside, E.C., at 12.30 o'Clock; by Protheroe & Morris.

For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —36·4°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 4 (6 P.M.): Max. 50°; Min. 46°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 5 (10 A.M.): Bar., 29·8; Temp., 49°. Much rain.
PROVINCES.—*Wednesday, Jan.* 4 (6 P.M.): Max. 49°, West Coast of England; Min. 45°, East Coast of Scotland.

Sir Joseph Hooker.

THE retirement of Sir JOSEPH HOOKER from the Editorship of the *Botanical Magazine* affords us an opportunity of presenting to our readers a portrait of this distinguished botanist. The history of the Magazine was written in our columns by Mr. HEMSLEY,* so that it is not necessary to enter into details concerning it. It must suffice to recall that it was established in 1787, and was edited by Dr. (afterwards Sir WILLIAM) HOOKER from the year 1827 to 1865. For some years before he came to Kew the Magazine was edited by Dr. HOOKER at Glasgow. At that time his personal influence ensured the introduction to the botanic garden of that university of numerous rare and interesting plants which were figured and described by the Professor. On his removal to Kew in 1841, Sir WILLIAM HOOKER continued the editorship till his death in 1865, when he was succeeded by his son, Sir JOSEPH HOOKER. For a continuous period, therefore, of seventy-seven years botanists and gardeners have been indebted for the illustration and exact description of rare or interesting plants to father and son. The boon that has thus been conferred on botanists and gardeners is beyond computation, and is certainly not the least of the innumerable services that have been rendered to science and horticulture by Sir WILLIAM and by Sir JOSEPH HOOKER.

The very characteristic illustration that we give as a Supplement to this issue was taken from the portrait by HERKOMER in the possession of the Linnean Society. Another portrait hangs on the walls of the Royal Society.

The New Year.

IT is much easier to write of what is past than of what is to come. In the one case we have a solid basis of fact; in the other we have in some measure to rely on the unstable foundation of the imagination. Nevertheless the past in many ways governs the future, and enables us to anticipate coming events. Everything points to the success of the Horticultural Hall. All the Committees were enabled to meet in the new rooms on Tuesday last, and the Lindley Library is in process of rearrangement. The commodiousness and bright appearance of the exhibition hall command universal approbation, and the show, though small, was excellent in detail, and gave full promise of successful fortnightly meetings for the present year. Let us hope that in the near future the cost of the new building, which is so useful to the Fellows, will be defrayed, and that the Trustees of the Lindley Library may be afforded an income a little less beggarly in amount than that which is at present available. In the meantime we record with great gratification the fact that Baron Sir HENRY SCHROEDER, in addition to his former munificence, has undertaken to defray the costs incident to the removal and reinstatement of the Library. The Library, which has had a chequered career since it was purchased by the committee of the great International Horticultural Exhibition and Botanical Congress of 1866, will now be housed and arranged in a manner consistent with its value and importance. It occupies the topmost floor of one wing of the new building, and is fitted up with oaken shelves, projecting cases, tables and other requirements, so that at last there is more than a prospect that the Society will be in a position to offer to the Fellows facilities for study and research far greater than it has previously been able to do.

One of the most important horticultural events of the present year will in all probability be that of the Royal Caledonian Horticultural Society, which will hold a great International Horticultural Exhibition in Edinburgh from September 13 to 15.

On this occasion we may expect to see a grand collection of fruit, as the prizes offered will doubtless ensure a brisk competition. We are pleased to note that an attempt is to be made to render these exhibitions more generally useful to horticulture by encouraging exhibits calculated to promote the advance of scientific horticulture. Thus we see that exhibits are requested illustrative of any new or improved method of cultivation, or any new application of scientific facts to practical purposes. This opens up a very large field, including as it does the results of hybridisation and cross-breeding. Too much must not be expected from this section in the first instance, but as a means of infusing variety into the stereotyped arrangements of an ordinary flower-show it should be welcomed quite independently of its prospective benefits to practical horticulture.

The Royal Horticultural Society will hold its usual exhibitions in the Temple Gardens and at Holland House, also a great show of British-grown fruit, and another of Colonial-grown fruits, in addition to the ordinary fortnightly meetings. The Society's examinations in horticulture will be held as usual, and it is expected that the new gardens at Wisley will be so far modified as to afford facilities for the resumption of the old Chiswick trials.

The National Rose Society, the National Chrysanthemum Society (whose dates of exhibitions at the Crystal Palace are not yet fixed), the Potato Society, the Sweet Pea Society, and all of the other special societies, will continue to hold exhibitions; and the provincial horticultural societies have already announced that exhibitions will be held at Shrewsbury, York, Newcastle, Manchester, Wolverhampton, Hanley, and other places.

It is satisfactory to know that a larger number of the special Societies than heretofore will hold their exhibitions in conjunction with meetings of the Royal Horticultural Society.

The British Gardeners' Association has arranged to hold meetings in various parts of the country with the view of enlightening local gardeners as to its aims and purposes. It is hoped that there will be a large accession of members now the New Year has dawned.

The Almanac which we issue with the present number shows how numerous are the fixtures for the present year. We cannot make it complete, for several of the societies have not yet fixed their dates of meeting, and some of the dates are liable to revision. Nevertheless we trust it will be found serviceable as a reminder to our readers, and will act as an incitement to them in future to keep us posted in local events.

Upon the whole the year 1905 promises to be one of satisfactory activity, though it is not likely to be distinguished by such important events as marked the Centenary of the Royal Horticultural Society last year.

"THE JOURNAL OF THE KEW GUILD."—As an excellent illustration of what may be effected by co-operation and good fellowship we may call attention to the Kew Guild, an association of those who are or have been connected with Kew at some portion of their career. The annual Journal, which contains letters from old Kewites in every part of the world, is most interesting even to those who have not been so fortunate as to have passed through Kew. The present number, in addition to business details, contains an account of the annual dinner, presided over by Mr. WATSON, a function that becomes annually of increasing importance. The Himalayan-house is the subject of a notice, together with an excellent illustration of the rock-pool constructed in it. The letters from old Kewites in various parts of the world, to which we have already alluded, are so interesting as to excite the envy of editors. We are pleased to see as the frontispiece to the present part a portrait of our valued friend and correspondent, Mr. N. E. BROWN, an acute and painstaking botanist, to whom we have very often been indebted for valuable assistance, and who has contributed numerous descriptions and illustrations of interesting plants to our columns.

---

* See *Gardeners' Chronicle*, vol. 1. (1887), beginning at p. 345; vol. xix. (1896), p. 389; vol. xx. (1896), p. 651; and vol. xxxi. (1902), p. 289.

"The Botanical Magazine."—The January number, which inaugurates a new series (the fourth), now appears under the editorship of Sir William T. Thiselton-Dyer. Little alteration has been made in the appearance of the magazine, beyond a few changes in the type, the name of "Curtis" even being retained on the title-page as a survival. The plants figured are:—

Cadalvena spectabilis, Fenzl., t. 7992.—A noble-flowered Ginger-wort from Tropical Africa. The flowers are bright yellow. Mr. C. H. Wright furnishes the technical details relating to it. The species flowered at Kew.

Cotyledon elegans, N. E. Brown, t. 7993.—A Mexican species described by Mr. N. E. Brown, and readily distinguished by its inflorescence, which bears two flowers only. Kew.

Phyllostachys nigra, Munro, t. 7994. — This Bamboo is considered by Dr. Stapf to be synonymous with P. Henonis, P. Castillonis, and P. boryana. It is a native of China and Japan.

Swainsona Maccullochiana, F. Mueller, t. 7995. —A handsome leguminous plant with purplish Pea-like flowers in long racemes. It is a native of N.W. Australia. Kew.

Vanilla Humblotii,' Reichb. f., t. 7996.—A very handsome yellow-flowered species from the collection of Sir Trevor Lawrence. It is a native of Madagascar, and was originally described in our columns in 1885, vol. i., p. 726.

"The Garden Magazine" is the title of a journal to be published by Doubleday, Page & Co., New York, on January 14, and to be devoted to all branches of gardening. It seems strange that whilst trade journals have so large a circulation in the States and are so well conducted, yet there seems no public in America for a gardening journal that is not exclusively commercial. The proprietors of the *Garden Magazine* are evidently intending to make a public, and we hope they will succeed.

Cattleya labiata.—Mr. (afterwards Sir William) Hooker was the first to flower this Orchid in 1818, at Halesworth, Suffolk, the plant having been received from its discoverer, Mr. Swainson.

Gaspard Bauhin's Herbarium.—One of the works undertaken by Pyramus de Candolle was the investigation of the herbarium of Gaspard Bauhin. Gaspard or Kaspar Bauhin was born at Basle in 1560, and died in the same city in 1624. His herbarium has since 1802 been in the possession of the University of Basle, and it was in the year 1818 that Pyramus de Candolle first devoted himself to its study, giving special attention to the synonyms of the plants named in Bauhin's celebrated *Pinax*. The revision was, unfortunately, never completed, but sufficient progress had been made to induce M. Casimir de Candolle to publish the results of his grandfather's investigations on the synonyms of the plants mentioned in the *Pinax*, These are now issued in a convenient booklet, entitled *L'Herbier de Gaspard Bauhin*, which comprises the textual reproduction of all the determinations made by the elder De Candolle in his copy of the *Pinax*. Appropriate prefixes and a portrait of Pyramus de Candolle accompany the volume.

"A Gardener's Year."—We have on more than one occasion called attention to the serviceable nature of Mr. Rider Haggard's notes in the pages of the *Queen* on gardening, and now learn that the notes are to be issued in book form under the title, *A Gardener's Year*, with twenty-six illustrations. This work is not a text-book, but a record kept throughout the year of the various operations carried on in a Norfolk garden of moderate size, in which a good many varieties of fruit-trees, flowers—including Orchids—and vegetables are grown. It also treats incidentally of matters kindred to their cultivation. The author hopes that it may please those readers to whom such things are of interest, and at the same time convey a certain amount of useful information which may help towards the establishmant of a successful garden. The book is to be published by Messrs. Longmans & Co.

Saharanpur Botanic Garden. — This garden, with which are associated the names of Falconer, Royle, and more recently of Duthie and others, is now under the management of Mr. Leake.

Too Much Potato!—At the recent "cooking test," the judges were called on to taste and deliver judgment on no fewer than sixty-seven samples. How did they do it? Sixty-seven different pots were made use of for cooking the tubers. Where did these pots come from? Who cleaned them after the feast? Some of the samples of each variety came from Essex, some from Lincolnshire, and some from Scotland, and it was remarked that the flavour of those grown in Essex was superior to that of those grown in Scotland. Among those noted as excellent were Up-to-Date, The Crofter, Dalmeny Hero, Charles Fidler, Duchess of Cornwall, Sim Gray, Highlander, Twentieth Century, and Dobbie's Favourite.

A Social Gathering in the North.—A large attendance of *employés* and friends of Messrs. Dobbie & Co., Rothesay, met in the Public Hall, Rothesay, on Friday, December 23. Councillor Fife presided, and was supported by his partner, Treasurer Burnie. Among others present was Mr. James Dobbie, founder of the firm. The hall was beautifully decorated with greenery and cut flowers, the catering being in the hands of Mrs. Johnston, Victoria Restaurant. The evening's entertainment included singing and dancing.

"Willing's Press Guide."—This publication is always welcome, and the present, thirty-second, annual issue seems even fuller of information than were its predecessors. It contains, as most readers know, a list, with addresses, of all the periodical literature of Great Britain, tables arranging these publications according to their subject matter, and other particulars concerning them. Appended are lists of the principal Colonial and foreign journals, and a variety of general information. *Willing's Press Guide* is obtainable from 125, Strand, W.C., and from 162, Piccadilly, W.

Vanishing Plants.—The *Gardeners' Chronicle* for December 17 contains an interesting letter from Dr. Perez, of Teneriffe, relating to Statice arborescens, Broussonet. It is much to be regretted that the number of species dying out from their original habitat is increasing. Dr. Perez speaks of a species peculiar to Teneriffe which, he tells us, is all but extinct owing to unknown causes, but found a refuge in two small islands, where it is likely to be extirpated by the goats. There would be less cause for regret if this curious and characteristic species were really, as the *Index Kewensis* states, identical with S. fruticans, Webb, which may, it seems, still be found near Bueno Vista, Teneriffe. But if Boissier's monograph (*Prodomus*, De Candolle, vol. xiii., p. 636) is to be believed these two species, though allied, differ first in their size (the leaves are three times smaller), which I am aware is not a reliable botanical characteristic, then in the stem, which has the branches unprovided with wings; in the bracts, which are hairy within and with less spreading tips, and so on. The species being then distinct, and Teneriffe and the Canaries being classic ground for Statices of the nobilis group, which seems to be of ancient creation, it is important to try to preserve these floral treasures in their habitats. Dr. Perez tells me that he cultivates the Teneriffe Statice; will he let me suggest a proposal which the Association for the Protection of Alpine Plants seeks to encourage in Switzerland, that of the creation *in situ* of an enclosure or sanctuary well fenced from the attacks of goats and rabbits. The spot should offer as nearly as possible the conditions of the plant's home, and the barriers must be strong. This little garden or enclosure must be protected by some local political or scientific authority, and the natural propagation of the species must be assisted by every means known to horticulture. Dr. Perez, who still possesses some specimens of this vanishing type, could perhaps plant some of them in some such position, and thus contribute to the preservation of an interesting species that would otherwise become extinct. To those who consider me as holding Utopian views, I would recall two facts recorded in the *Gardeners' Chronicle*. Psiadia rotundifolia, Hook., once abundant in St. Helena, is now only represented by a single specimen, which was figured February 11, 1888, and a regret expressed that it was the last of its race. It is interesting as being the only shrubby Composite in that island which has survived to this time. On the other hand, Mr. A. D. Webster, in *British Orchids*, pp. 41—44, speaks of the distribution in Ireland of Spiranthes Romanzoviana, Cham., whose only European habitat is on the coast of Bantry Bay, near Castletown, in the South of Ireland. In 1844 Babington foretold the approaching disappearance of this plant, which is interesting as being the only Orchid known which forms the flower-buds for the next year before the fall of the current year's leaves, suggesting to this botanist that it formed bulbils in the axils of its leaves as does Lilium bulbiferum. The plant has been so sought by collectors and uprooted by natives, that in 1887 Mr. Webster wrote in the *Bulletin de l'Association pour la Protection des Plantes* (1888, p. 24), that it might be considered to have disappeared, with the exception of some cultivated specimens at Kew and in Dublin. There is, it is true, a Romanzoffia, clocely allied to it, which the *Index Kewensis* considers to be identical, and which is found in North America. Bentham, and after him Lindley, considered the two to be distinct. *Henry Correvon, Chêne-Bourg, Geneva.*

SOFT-ROT OF CALLA.

Since the short note on p. 410, a correspondent (p. 466) has intimated that the same disease was observed in this country four or five years ago. It seems to have been first noticed in the United States about five or six years ago, but attention has been specially directed to it by a report issued by the Department of Agriculture* during 1904. Probably the same disease was known to a limited extent in New Jersey in 1893. The Callas are found rotting off at or just below the surface of the ground, the decay sometimes extending down into the corm, sometimes upwards into the leaves, and frequently in both directions. Occasionally the disease seemed to start in the edge of the leaf-stalk, in the flower-stalk, or in some underground part of the corm, though as a rule it started at the top of the corm, just above but near the surface of the ground. The disease was worse and spread most rapidly in houses where the Callas were grown in solid beds.

When a diseased corm was cut open, it was found that there was a distinct line between the healthy and diseased portions of the corm. The healthy portion was firm and nearly white; the diseased part had a decidedly brown colour, and was soft and watery. When the disease extends upwards into the leaves, it is the edge of the petiole that first becomes involved, the affected part becoming slimy without at once losing its green colour. As the disease progresses towards the centre of the petiole, the edges of the leaf become pale, then brown. Pale spots, turning brown, then appear in other parts of the leaf-blade, and finally the whole leaf becomes brown and dead. Frequently the disease develops so rapidly that the leaf rots off at the base and falls over before it has time to lose its green colour. When the disease attacks the flower-stalk the flower turns brown, and the stalk, without having decayed more than a fraction of an inch, eventually falls over. When the disease works downwards through the corm it reaches the roots, which become soft and slimy within, while the epidermis remains intact; eventually the slimy contents dry up, and only the dead skin of the roots remains. When the disease begins below the surface of the ground, the lower portion of the corm frequently rots away, causing the plant to fall over, without any previous indication of disease.

---

* Bulletin No. 60, *A Soft-Rot of the Calla Lily*. By Dr. C. O. Townsend, June 30, 1904.

If the conditions for the development of the disease are unfavourable after the corms are affected, the softened spots will dry down and become darker in colour. In these spots the disease may remain dormant until the conditions are favourable for its further development. In this way the disease is carried over from season to season, and it may be transported.

Examination has proved that the cause of disease is a minute organism of the Bacteria kind, which has been called Bacillus aroideæ, which need not be described here, of which artificial cultures have been made, and healthy plants have been inoculated therewith, producing the disease as well as in some other plants. This organism occupies the intercellular space in the host and dissolves the layers that connect the cells, causing the affected tissue to break down into a soft slimy mass. It is able to attack a large number of raw vegetables, and is capable of producing soft-rot in many of our useful plants, such as Carrot, Potato, Turnip, Radish, Cabbage, Cauliflower, and such green fruits as Tomatos, Eggplant, and Cucumber. Care must therefore be taken not to throw any decayed or partly decayed Callas, or the soil from a bed in which Callas have decayed, to any place where the vegetables above mentioned are to be grown.

It does not attack tree-fruits readily, and hence is not likely to produce fruit-rots. Its growth is not affected by diffused light, but direct sunlight will kill the organisms when isolated in from five to fifteen minutes.

The successful treatment of diseased plants in the bed was considered impracticable, and preventive measures had to be resorted to. It is safe therefore to state that the soft rot of the Calla may be prevented or held in check sufficiently for all practical purposes by changing the soil every third or fourth year, depending upon the number of cases of rot that appear, and by exercising due caution in selecting only healthy plants for the bed. Diseased corms may be detected even in the dormant state by examining for discoloured spots, but it is safer to start the plants in pots, even after the corms having discoloured areas have been rejected, to ensure getting as few diseased plants as possible in the beds, since some corms are so slightly affected that the disease is not easily detected in the dormant state. *M. C. C.*

PUBLICATION RECEIVED.—*Trade Press List* (American), 50, Central Street, Boston, Mass., U.S.A.

ASPARAGUS SPRENGERI IN FLOWER.

I SEND you a photograph of a spray of Asparagus Sprengeri taken when the plant was in full flower. This plant is 7½ feet in length, and the upper portion 3¾ feet in width. The aroma of the flowers is very pronounced and delicious, especially in early morning, and resembling that of Peaches when very ripe. The flowers are a great attraction to bees. The species is worthy a place in every conservatory and is most effective when planted with Asparagus deflexus in hanging baskets. The flowers of the latter species are not conspicuous, but when the plant is studded with scarlet berries intermingled with the feathery foliage, it is very attractive. Both species are native of Zululand.

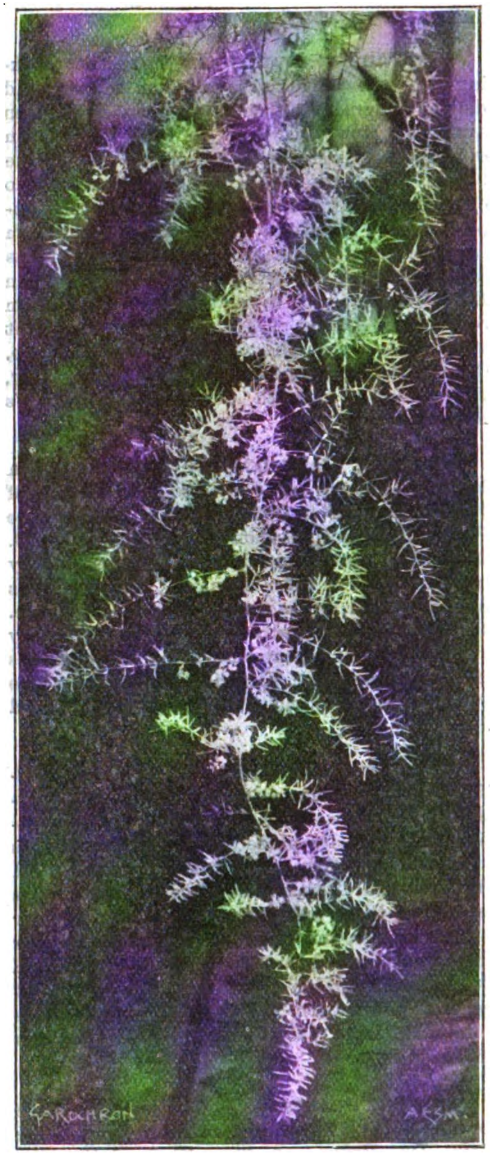


FIG. 4.—ASPARAGUS SPRENGERI IN FLOWER.

Asparagus Sprengeri was discovered by J. Medley Wood, Esq., of the Natal Botanic Gardens, Durban, growing in the kloofs, where I am told it grows luxuriantly, hanging in festoons, and forming an imposing sight. Mr. Wood forwarded specimens to Italy, to see if it was already in cultivation, but heard nothing further until it was introduced as Asparagus Sprengeri by Mr. Sprenger, nurseryman, Naples, Italy. I think a word of praise is due to Mr. Wood for introducing such a valuable plant, also for other introductions, such as Cyrtanthus O'Brieni, Ceropegia Woodii, &c. I may say the plant of A. Sprengeri was put into the basket, which is 12 inches in diameter, from a 7-inch pot. The photograph was taken nine months later, and serves to show how rapidly the plant grows. *W. Thorpe, Gardener to J. M. Collett, Esq., Hillfield, Gloucester.*

FOREIGN CORRESPONDENCE.

NOTES FROM JAPAN.

THE GENUS ANEMONE.—Among early spring flowers is the delicate Anemone Hepatica. I like this charming species, and cultivate many wild varieties of various colours. They flourish in a cool, windy place, as is general with all Anemones. The winter sunshine causes them to open into unexpected beauty, and they continue in bloom for a long time. It may be said that this Hepatica has two different forms, one with sharply-pointed lobes to the leaf, the other obtuse at the tips, as is seen in the wild specimens. These may be collected in the same mountainous region far from Tokyo.

Besides this Hepatica there are other species of the genus Anemone which prefer woodlands and hillsides, with rich light soil and partial shade. They are not generally known in our nurseries. I will here enumerate the names only of the species I know; they are as follows:—A. altaica, Fischer; A. cernua, Thunberg; A. gracilis, Fischer; A. flaccida, Fr. Schmidt; A. japonica, Siebold et Zuccarini; A. Keiskeana T. Ito.; A. nikoensis, Maximowicz; A. Roddeana, Regel; A. stolonifera, Maximowicz.

ADONIS DAVURICA.—There are only two species of the genus Adonis known in Japan—A. davurica, Ledebour, and A. villosa, of Ledebour. The wild species I have occasionally met with in mountainous and northern regions. It blooms freely, and the beautiful flower is yellow in colour and prefers sunshine, and is afterwards gradually hidden away under the surrounding foliage, which forms a good shady situation for it. Bearing this natural aspect in mind our successful cultivators imitate the natural conditions and so acclimatise it in our gardens. The common form of the plant was brought last year into our market by professional florists. These plants are admired by us, and grow well in pots in the early, pleasant days of the year. There are many garden hybrids and varieties which are raised from seedlings. Some of them are less beautiful than is the common one, but they are appreciated by those who like rarity and novelty. *K. Hagiwara, Tokio.*

TREES AND SHRUBS.

THE HANDLING OF SEEDLINGS.

THE raising of plants from seed is usually an easy matter, as it is only a question of providing the proper conditions of heat and moisture necessary for germination to ensure a fair crop of seedlings if good seed is used. It is when the seedlings have become large enough to require transplanting that the greatest difficulty arises. As there are so many individual wants to satisfy, it becomes a matter of forethought to ensure that each different class of plant shall be grown under the conditions and in the soil best suited for it. It may be argued that seedlings of hardy trees and shrubs are hardy, and able to look after themselves if kept clear of weeds, but in practice this is not the case by any means, as like other classes of plants some are quick-growing and easy to cultivate, others are slow of growth and require constant attention, while some are either easy or difficult subjects according to whether their requirements are properly understood or not.

Those that can, to a certain extent, be left to look after themselves are chiefly forest and underwood species, such as Horse Chestnut, Beech, Pine, Sycamore, Spruce, Larch, Alder, Quick, &c., though in the case of some of these a certain amount of knowledge is required to know where to plant them, as it is utterly wrong to plant Larch or Sweet Chestnut, for instance, in low damp ground where they are liable to be cut by spring frosts; or Spruce on a poor stony hillside where it cannot grow. The Douglas Fir and Silver Fir are quick-growing plants that require a rather poor dry soil, as if planted in strong ground they make long weak leaders, which spoil the shape of the plants in after years; a long leader in a young state meaning so much bare stem when the plants get older. Spruce, Larch, Beech, Oak, &c., require good deep ground where they can grow quickly, as the faster they grow the better and "kinder" plants they make.

The greatest difficulty with seedling hardy trees and shrubs arises when we come to deal with purely ornamental plants, many of which require careful handling to ensure properly-shaped and well-rooted specimens afterwards. Probably the common Holly is the worst, as it requires constant attention to keep it in proper condition for removal, strange though it may seem, that an indigenous plant should give more trouble than many exotics. Seedling Hollies require to be transplanted annually for the first three or four years after being taken from the seed-bed, at the end of which time they will stand and keep well rooted for two years. The following plants, Arbutus, Cytisus, Genista, Magnolia, Photinia, Ulex, Abies grandis, Cedrus, Tsuga Mertensiana, and in fact the majority of Coniferæ, must be transplanted annually for at least two years after leaving the seed-bed, or they will get coarse-rooted and at least fifty per cent. of them will die after transplantation if left longer than a year without being moved. Sequoia and Libocedrus especially must be shifted every year until they are in permanent quarters, for they grow fast and make long thick roots if left for two seasons, the cutting off of which will either cause the death of the plant or else cripple it so much that it takes two or three years to recover.

An attempt to avoid the trouble of handling many subjects that are difficult to transplant is made in many instances by growing them in pots; but this system cannot be too strongly condemned, as pot-culture is ruinous to most hardy, ligneous plants, especially those which ultimately form trees. There are three plants that cannot be handled successfully in the open ground, and they are Cratægus Pyracantha, Garrya elliptica, and Quercus Ilex, none of which I have ever been able to transplant with success, for even if they do not die, the upper part of the plant dies away, and instead of growing larger it gets smaller and weaker year by year. Excepting these three species there is practically no plant that cannot be handled successfully in the open ground. To grow Coniferæ, such as Abies, Picea, or Pinus, or any which make large trees with age, in pots, is a great mistake, as the roots take the shape of the pot, and rarely, if ever, get away freely when planted out. To have plants in pots seems to have become the rage this last two or three years, but plants from the open ground are far preferable, if they have been properly transplanted and kept in good order for removal. *J. C., Bagshot.*

PEAR PASSE CRASSANE.

IN our issue for December 24, Mr. Geo. Woodward, in his article, "Pears for Christmas and After," referred to the variety Passe Crassane in the highest terms of appreciation, and described it as a winter Doyenné du Comice (fig. 5). We have since received some specimens of the Pear from Mr. Woodward, and are disposed to agree fully with his estimate of its merits. The fruits are now at their best, but some of them, Mr. Woodward informs us, will keep in good condition until March.

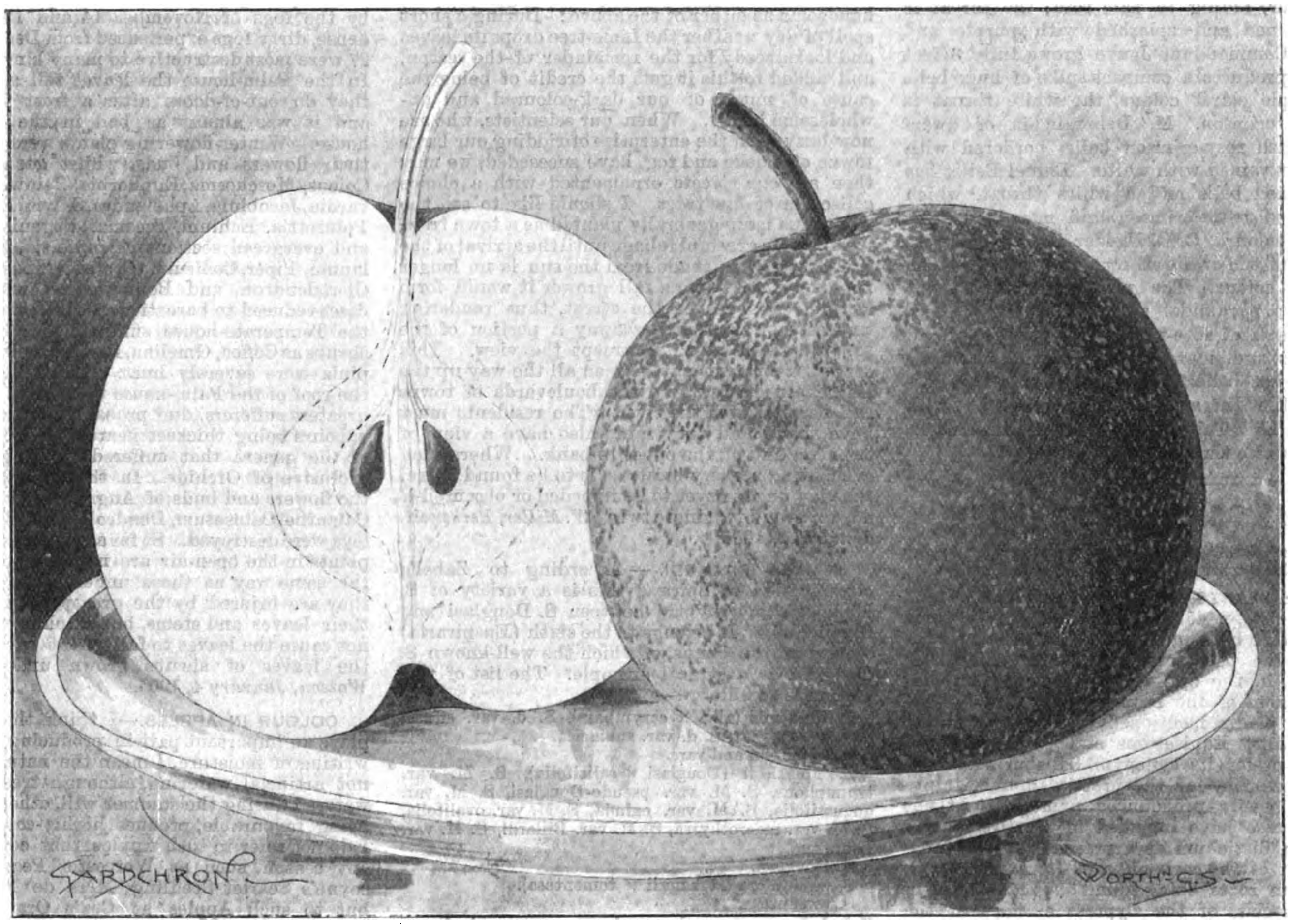


FIG. 5.—PEAR PASSE CRASSANE.
(From specimens supplied by Mr. Geo. Woodward.

FLORISTS' FLOWERS.

NEWER VARIETIES OF PENTSTEMONS.

FOR some time past I have taken a deep interest in Pentstemons, selecting the best named sorts and growing them as well as I can; and as every season adds to my list of varieties, making a final selection is a matter of considerable difficulty. This season I am growing a batch of varieties introduced by Mr. Forbes last year; and for the benefit of those interested in Pentstemons I have noted a few of those most desirable. Crimson Gem is perhaps one of the most effective varieties in existence. The colour is dazzling crimson-scarlet, the throat broadly margined with cinnamon. Emile Rodigas is the brightest scarlet Pentstemon I know, a distinct advance even upon Lord Lister, Phryne, or George Howe. The throat is pure white, and the bells fully 2¼ inches in diameter. The habit of growth and strength of the flower-spike are all that could be desired. Miss O. Inglis is not quite so large in the bells as some, but point of colour it is distinctly pleasing. The bells are rosy-scarlet-coloured, and the throat white, margined and striped with rose-colour. Marcel Dubois reminds one much of Talma; in colour it is blush-white margined with rose, paler than in the case of Talma. It produces a vigorous flower-spike, and in every way is desirable. Jules de Lerne is of sturdy growth, producing a large spike of carmine-coloured flowers with pure white throat. R. Heywood Thompson has deep-rose-coloured bells, and a white throat, margined with pale rose, flushed and striped with purple. Dr. Barrie is purple-crimson or of deep-claret colour, a fine spike with bells 2¼ inches in diameter. Henry Parr is rose-coloured, with a white throat margined and splashed with scarlet, of vigorous growth, producing a long spike of well-formed flowers. Marconi has rosy-crimson bells and white throat, veined and spotted with crimson and margined with rose colour. Edwin Beckett has the outer part of the bell of rose colour, fading to pale rose; the throat is white, veined and splashed with purple and scarlet. Commandant Jouve grows fully 3 feet high and produces a compact spike of huge bells of a purple claret colour, the white throat is margined crimson. M. Deherain is of dwarf growth with rosy-crimson bells, bordered with red, throat veined with white. Daniel Bellet has rose-coloured bells and a white throat, which is pencilled with crimson and margined with chocolate colour. C. R. Fielder is of a rich rose colour, but the white throat is margined with chocolate colour. The plant produces a fine closely set pyramidal spike of flowers. Lord Rothschild is of rose-pink colour, and the throat is veined and margined with crimson. John Jennings has bells 2 inches in diameter, of rose colour; the throat is white, margined with crimson. Miss Talbot has rich dark crimson bells and pure white throat. *E. Molyneux.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FOSSIL PLANTS.—Your correspondent "M. A." (December 24, p. 452) gives the names of some plants still to be found growing in recent formations of the post tertiary system, which also flourished in the coal measures of the carboniferous system of the Deutozoic life period. The names of plants mentioned by "M. A." are the Mare's-tails, Equisetums and Ginkgo biloba; I always prefer its synonym, Salisburia adiantifolia, as being by far the prettier, and certainly the most easily-pronounced name. Might not "M. A." also have included in his list that of Taxodium distichum as a present-day continuation plant of the carboniferous formation, as we read of its roots being found at great depths in the under-class of the Cypress swamps of the Mississippi valley, just as stigmaria—the roots of Sigilaria—are found in the under-clays of the coal measures? And are not our Araucarias, Cycads, and some forms of the present period but a continuation also of the flora of the carboniferous life period? Many fine avenues and isolated specimens of Araucaria are to be met with throughout the country, succeeding best on dry soils, and where the thermometer does not fall very low. Some handsome specimens of Taxodium distichum are also to be met with; a very fine tree of it may be seen in the park at Combe Abbey, which I measured with an Abney level in 1887; its height then was 75 feet, and circumference at 3 feet from the ground 11 feet 6 inches. The same tree measured by J. C. Loudon in 1843 was 47 feet high, and diameter of trunk 2 feet 3 inches. There is a large specimen at Asbury Priory, the seat of F. A. Newdigate, Esq., M.P.; but unfortunately during that ever-memorable and destructive hurricane of Sunday, March 24, 1895, a large piece was broken from off the top of it. Loudon, in his *Arboretum*, gives a list of the localities where Taxodium may be seen, also of when planted, their height, and diameter of both "top" and "butt." This tree thrives best in moist places. "M. A." incidentally remarks that Salisburia adiantifolia makes an admirable tree for town or street planting. Would he kindly give some information as to where it may be seen in this position? and also whether he could give any information where in this country the Ailanthus glandulosus, or Tree of Heaven, may be seen as a street or town tree? [We know of specimens of each in the environs of London. ED.] Why the Ailanthus should also be known by the synonym of "Tree of Heaven" I am at a loss quite to understand. Is it because it grows so tall? But have we not trees in this country which tower heavenwards by many feet higher than the Ailanthus? We need only mention such trees as the Elm, Douglas Fir, the Lombardy, and the Black Poplar; all of them are quite as entitled to be "trees of heaven" as the Ailanthus. At present the choice of trees for town planting seems to be chiefly confined to two species, viz., Platanus orientalis and varieties of Tilia or Lime tree. Surely some other trees might be found quite as suitable and certainly quite as handsome as either of the above! During a short spell of dry weather the Lime-tree drops its leaves and looks seedy for the remainder of the season, and added to this it gets the credit of being the cause of much of our dark-coloured and unwholesome honey. When our scientists, who are now busy with the enterprise of ridding our large towns of smoke and fog, have succeeded, we may then see our streets ornamented with a choice collection of fine trees. I should like to see the Ailanthus more generally planted as a town tree; it retains its graceful foliage until the arrival of the first frost, when shade from the sun is no longer necessary, and being a tall grower it would form a high canopy over the street, thus rendering unnecessary the cutting away a portion of the tops of trees which intercept the view. This sort of treatment may be seen all the way up the Rhine, especially where the boulevards of towns run parallel with the river. The residents must have shade, and they must also have a view of the river and of the opposite bank. Where such enchanting scenery exists as is to be found there, the view ought never to be impeded or obscured—no, not even by a single twig. *W. Miller, Berkswell, January* 2, 1905.

SPIRÆA BILLARDI. — According to Zabel's classification of Spiræas this is a variety of S. Menziesii ×, a hybrid between S. Douglasi and S. salicifolia. It belongs to the sixth (Euspiraria) section of the genus, of which the well-known S. Douglasi is a typical example. The list of this section is as follows:—

S. difformis (alba × corymbosa), S. d. var. effusa, S. d. var. typica, S. d. var. subincisa.
S. salicifolia and vars.
S. Menziesii (Douglasi × salicifolia), S. M. var. triumphans, S. M. var. pseudo-Douglasi, S. M. var. angustifolia, S. M. var. eximia, S. M. var. ovalifolia, S. M. var. macrothyrsa, S. M. var. Billardi, S. M. var. Lenneana.
S. Douglasi.
S. pallidiflora (Menziesii × tomentosa).
S. tomentosa.

Zabel, however, made nearly as many varieties or hybrids as he grew plants, so that it is a difficult matter to know the differences between some of them. There is really very little distinction between the above varieties of S. Menziesii. *J. C., Bagshot.*

EFFECTS OF RECENT FOGS ON PLANTS AT KEW.—Last month will be remembered at Kew as one in which an exceptional amount of damage was done to indoor plants by fog. Nothing like it has been experienced here since the winters of 1889-90 and 1890-91, when fogs proved so injurious, not only near London, but in other parts of the country, as "to cause dismay to all interested in horticulture, and gave rise to a general feeling that something ought to be done." This led to an investigation, at the instance of the Scientific Committee, of the "Effects of Urban Fog upon Cultivated Plants" by Prof. F. W. Oliver, and his report was published in the *Journal of the Royal Horticultural Society*, vol. xiii., 1891, and vol. xvi., 1893. He found that the injury to plants caused by fog in the neighbourhood of large towns was due to the presence of various poisonous vapours, particularly sulphurous acid, which come chiefly from coal smoke. These poisons cannot be kept out of plant-houses except by contrivances which are not practicable, and we are therefore reduced to the very indifferent expedient of maintaining a comparatively low temperature and a dry atmosphere in the houses whilst the fog is upon us. It is doubtful if these conditions serve to mitigate the ill-effects of fog. At any rate, we have suffered terribly at Kew, notwithstanding the precautions taken to lessen the effects. Sulphurous acid could not be kept out of the houses, whilst over everything outside, including the glass, there was deposited a layer of what might be called a mixture of tar, oil, and soot, which has stuck hard, darkening the houses, and no doubt doing much damage to outside vegetation. The gardener in the country knows nothing of these difficulties, but it is to be hoped that he does not overlook them when he inspects the work of his less fortunate brethren. Up to the middle of December the indoor collections at Kew were healthy and flourishing, although a few delicate Orchids, such as Calanthes and Dendrobium Phalænopsis, and some greenhouse plants, particularly Begonias and Acanthads, were injured by the fogs of November 14 and 15. But the dense, dirty fogs experienced from December 19 to 27 were most destructive to many kinds of plants. In the Palm-house the leaves fell as thickly as they do out-of-doors after a frost in October, and it was almost as bad in the Temperate-house. Winter-flowering plants were stripped of their flowers and buds, whilst such genera as Coleus, Moschosma, Euphorbia, Reinwardtia, Bouvardia, Jacobinia, Aphelandra, Salvia, Eupatorium, Poinsettia, Echium, Tecoma, Begonia (tuberous and evergreen sections), Brunfelsia, Luculia, Solanum, Piper, Codiæum (Crotons), Ipomæa, Panax, Clerodendron, and Bougainvillea were in most cases reduced to bare sticks. Even the Acacias in the Temperate-house suffered, and such sturdy shrubs as Coffea, Gmelina, Barringtonia and Cæsalpinia were severely hurt. The climbers under the roof of the Palm-house were on the whole the greatest sufferers, due probably to the poisonous vapours being thickest nearest the glass. A list of the genera that suffered most numbers 118, exclusive of Orchids. In the Orchid-houses all the flowers and buds of Angræcum, Phalænopsis, Calanthe, Catasetum, Dendrobium, Lælia and Cattleya were destroyed. So far as my observation goes plants in the open-air are not affected by fog in the same way as those under glass. No doubt they are injured by the greasy-sooty deposit on their leaves and stems, but sulphurous acid does not cause the leaves to fall off at once as it does the leaves of shrubs grown under glass. *W. Watson, January* 4, 1905.

COLOUR IN APPLES.—I think that moisture plays an important part in producing colour. In writing of moisture, I mean the natural rainfall, not artificial watering, although trees copiously watered during the summer will, other conditions being favourable, produce highly-coloured fruit. I do not refer to such Apples that colour well in any season, such as Worcester Pearmain, Gascoyne's Scarlet Seedling, Mère de Ménage, &c., but to such Apples as Cox's Orange Pippin, Ribston Pippin, Boston Russet; and, among cooking Apples, Tower of Glamis, Alfriston, &c. The sun plays an important part in bringing out the colour, but some soils will produce a higher and more intense colour in both Apples and Pears than others. Is this due to the presence of iron in the soil? The most striking example of moisture producing colour which I have ever noticed was during the past summer, after the heavy rains we had in the month of July—4 to 5 inches. One could almost see the colour deepen day by day, not only in fruit, but in other things. Some Dracæna-leaved Beet, that was quite green, assumed a blackish-crimson colour a day or two after the rains, while it was also most noticeable in other root crops. Gravenstein is a good-flavoured Apple, but, like many other good things, it is very sparingly produced here. I could have shown good fruits of September Beauty at the Royal Horticultural Society's show, but put up Mabbott's Pearmain instead. I have never had Cox's Orange Pippin of such superb colour as they are this season, while the flavour is exceptionally good. I staged them twice in open competition; on both occasions there were over thirty-five entries, but they were far ahead of the others in colour and finish. Lady Sudeley has with me been much deeper in colour than usual this season; it is a grand early Apple to gather as required from the tree, and it is almost too large for dessert. *T. H. Slade, Poltimore Gardens, Exeter.*

LILY OF THE VALLEY.—Mr. Vrengdenhill, Haarlem, Holland, says, *Gardeners' Chronicle*, December 31, p. 466, "There seems no reason why they [flowers of the Lily of the Valley] should not be crystallised with sugar for sweetmeats." He does not seem to be aware that the Lily of the Valley is harmful in all its members, the flowers being the most dangerous part. The *Revue Horticole* published some time ago an account of the poisoning of a brood of fowls by the decaying flowers of the Lily of the Valley. Only the parent birds survived, and one out of ten chickens. *George Henslow (Rev.), Drayton House, Leamington.*

THE EPHEDRAS—JOINT-FIRS.—The members of the peculiar genus Ephedra, which look like the remains of some prehistoric vegetation, and bear strange resemblances to the Equisetums and Hippuris in form, are rarely seen in gardens, except where scientific collections of plants are grown; yet for rockeries or dry situations some of the species are useful, attractive with their bright red fruits, and graceful in habit. They are not difficult to grow, and are readily increased by layers. One of the most beautiful is the Himalayan E. Gerardiana, which grows freely, but does not usually exceed 18 inches or 2 feet in height. The stems and branches are slender, terete, suggestive of the smaller Equisetums, or a miniature Cytisus præcox; but there is a slight glaucous tint which adds to its beauty. E. nebrodensis is a much more vigorous species, reaching 2½ or 3 feet, and bearing a strong resemblance to the common Horsetail. Both these Ephedras thrive in any ordinary soil which is not too wet; and their resemblance to the Equisetums is confined to the form of the growths. The twenty or thirty species known are interesting also for their geographical distribution, for Europe, North and Central Asia, North Africa, North and South America, all include representatives. In Loudon's time it was suggested that some of these plants might be grown in dry regions as a soil-covering, in place of the grass of moist climates; but I am not aware that any extensive experiments have been undertaken in that direction. *R. L. C.*

CARNATIONS GLACIER AND MRS. S. J. BROOKS.—The original stock of Glacier I obtained from Messrs. Wm. Cutbush & Son when it was first offered. On changing situations about two years ago, I brought cuttings of Glacier with me. I found here Mrs. S. J. Brooks, which I was informed was also obtained from Messrs. Wm. Cutbush & Son. How is it that the two varieties are alike? I cannot take advantage of the kind offer of Messrs. Cutbush to show me the two varieties growing in their nurseries, but should be pleased to accept flowers and foliage of the two varieties. *Henry Butcher, Wheatley Park Gardens, Doncaster.*

THE CULTURE OF EUCHARIS (see vol. xxxvi., p. 412).—The most successful cultivator of these plants I have known used only hard water for them. Mr. Hambly, the gardener in question, was for some twenty years head gardener and steward to Chas. Aldenburgh Bentincke, Esq., and grew a large number of these plants in big specimens that to my certain knowledge occupied the same pots for ten years, and were flowered never less than twice, and often three times, each year; and further, the great leathery and robust foliage was distinct testimony that the strain upon them was not unduly great. The *modus operandi* as adopted by Mr. Hambly was as follows:—Immediately the flowers were cut for the decoration of the mansion or town demesne a much less quantity of water was afforded to the roots, and gradually the supply was withheld until the plants flagged somewhat, when they were transferred to an ordinary greenhouse temperature in winter, and to the Peach-house in summer. At the time of removal they were immersed in a tank and thoroughly saturated. The plants received no further supply of water until the leaves hung limp over the pot, and after this process had been repeated three times they were plunged to the rim in new tan in the stove. Hot-water pipes ran through the central bed, and a very high temperature was maintained, to which the plants invariably responded by producing a wealth of flowers. Fibrous loam only was used in top-dressing, with an occasional dose of liquid-manure prepared from sheep and fowl droppings, commencing from the time the flower-spikes made their appearance. *Walter H. Aggett.*

TREE CARNATIONS AT WORTH PARK, CRAWLEY, THE RESIDENCE OF MRS. MONTEFIORE.—A fine collection of these plants is now in fine flower at Mrs. Montefiore's residence. The plants are strong and vigorous, perfectly clean, healthy, and well-grown specimens. One large span-roofed house contains several hundred plants arranged on a high central stage quite close to the top of the house, sloping down to the path, facing all round, forming a lovely bank with scarcely a pot visible. There are also side benches filled with dwarf-growing varieties. It is a charming arrangement and will form a delightful picture all through the winter. The following sorts are grown in large quantities: Winter Cheer, Lady Carlyle, Mme. Franco, William Robinson, La Neige, Duchess of Devonshire, and Worth Park Favourite, a fine red variety raised by Mr. Allen, the head gardener. Large quantities of cut flowers are required during November and December. Two houses contain "Malmaison" Carnations in healthy condition, and just coming into flower; Churchwarden and Lady Ulrica are splendid in size and colour. Carnations are quite a feature. Several other houses contain Begonia Gloire de Lorraine, Coleus thyrsoideus, zonal Pelargoniums, and Chrysanthemums. It is a fine range of glass, and one house is allotted to each class of plants. Late Grapes have been excellent this season, especially Muscat of Alexandria and Black Alicante. *R. H. H.*

RIPENING WOOD-GROWTH ON NORTH WALLS.—When comment is made on the ease with which the shoots of the Morello Cherry ripen or mature on a north wall, it should be remembered that the shoots of this Cherry are invariably of a nature that admits of hardening or ripening under cool conditions as easily as the wood of Pears. Plums or Sweet Cherries will ripen on east or west walls, and very often the more tender wood of Peaches and Nectarines on south walls. It is true that some Pears and Plums will produce good fruit and ripen wood on north walls, but only in warm seasons and in Southern localities. I have seen Victoria fruiting finely on a north wall at Hackwood Park, Basingstoke, and in that way keeping up a long succession of fruit; but the finest fruit and crops, taking the average of years, are on east walls. In such a hot garden as that of Syon House, Middlesex, it is easy to understand Mr. Wythes' advocacy of the utilisation of north walls for certain Pears, but it must not be forgotten that even though little or no sunshine might fall on the trees, yet there the great heat absorbed by the brickwork on sunny days on the south side must serve to warm the wall on the north side materially, and in that way help to the maturation of the wood. A solid wall of brickwork once well heated by the sun parts with that warmth slowly, and trees on both sides of the wall greatly benefit. Even in Lancashire no doubt the same sun influence through the wall tends to the same end that is found in the South. *A. D.*

DAHLIA THE MIKADO.—I note on p. 455 of the last volume that amongst the National Dahlia Society's list of Dahlia novelties (for) of 1904 there is a single-flowered variety called "Mikado." A year previously this name was given to a novelty from the firm of H. Kohlmannslehner, Britz, Berlin, and as I am agent for this firm I beg to bring the matter before your readers to prevent any error. "Mikado" (Kohlmannslehner) was described and illustrated in *Die Gartenwelt*, vol. viii., p. 24, as one of the best novelties of its year. The flower very much resembles a "Chrysanthemum," and if this name had not already been given to a recent variety the raiser would have adopted that name. The thin tubuliformed florets, which are twisted and incurved, are of dark cherry-red colour. The flower is in size a little larger than "Red Rover," and very free-flowering, and was given the highest Certificate from the German Dahlia Society. Enclosed please find a copy of the issue of *Die Gartenwelt* in question, which contains the rules adopted by the German Dahlia Society. *Frank Koehler, London.*

CUCUMBER DISEASE OR "SPOT."—In reply to Mr. Owen Thomas's request with regard to the Cucumber disease or "spot" (Cercospora melonis) (December 24, p. 438), which has caused such severe damage and involved such enormous financial losses to the growers during the past ten years, I venture to give the results of several experimental trials of remedies which have been made at a large market-growing establishment in this neighbourhood, extending over the past four years. The proprietor has been a Cucumber-grower on a large scale since 1860; he first noticed the disease six years ago; since which date it appears to be getting worse and worse. Unless some remedy is quickly found the growth of this crop on an extensive scale is doubtless, as Mr. Owen Thomas says, a doomed industry in England. From systematic observations by the proprietor he became convinced that the disease was not caused by imperfect root action, neither by soil, manure, nor water. In the immediate vicinity of the nursery it was observed that many garden flowers and wild plants were attacked by a similar leaf-spot disease; it was thought therefore that the fungus germs were conveyed into the houses from outside. Several specimens of these diseased leaves were conveyed to the Rothamsted Experimental Laboratory, and the fungus was cultivated, with the result that it was found to be of quite a distinct character from that of the Cucumber leaf-spot. Preventive trials were set on foot in the year 1901. In the first year cow-manure was mixed with sulphur and applied to the hot-water pipes without any beneficial result. For the second crop an application of flowers-of-sulphur and quicklime was used; this also proved of no avail in stopping the disease. In the second year (1902) a Bordeaux-mixture was sprayed on to the plants as a preventive before there was any appearance of the disease, and was carried on at intervals through the summer. The spots, however, multiplied rapidly, spreading through all the leaves of every house, causing the plants to wither and decay. No disease could be found on the roots. In the third year the remedy as recommended by the Board of Agriculture was tried, using a solution of Potassium sulphide (liver-of-sulphur), 2 ounces to 3 gallons of water, adding 2 ounces of soft-soap. The solution was sprayed on to the plants, wetting every part, both the upper and the under surfaces of the leaves, and thoroughly drenching the soil. Again, a failure to stop the disease was the result. At the end of the season the whole of the surface-soil was wheeled out of the houses, and to the subsoil was applied a dressing of ammoniacal liquor. One ton of liquor was given to each 150-feet house for the purpose of killing any fungus germs that might be lurking in the soil or on the woodwork of the houses. So strong was the ammonia gas given off that it discoloured the paint on the woodwork and killed all insect life, but it did not prevent the appearance of the "spot" disease in the following season, even although new surface soil was employed. In the fourth year (1904) the disease was first seen as early as March 23. Commencing on March 25 the disease was kept in check by spraying the plants with a solution of sulphate of copper, using 1 ounce of copper to 36 gallons of water every fourth day. This eventually had the effect of drying up the plants so that they became extremely susceptible to the attacks of red spider, and it was impossible to keep these pests under. The remedy in this case was considered as bad as the disease. A preparation of cupram was also tried—½ pint of strong liquid ammonia was added to 2 quarts of water in which was dissolved 1 ounce of carbonate of copper. This blue fluid was further diluted with 12 gallons of water and sprayed on to the plants. But as this preparation could not be used after the fruit began to form it was useless in preventing the disease attacking the young foliage late in the season. In each of the four years it was found that the hotter the weather the more virulent was the disease. Every time a crop of Cucumbers was finished the woodwork of the houses was washed with a solution of sulphate of iron, 2 oz. to a gallon of water. Sulphate of iron has also been applied as manure. Varying quantities of sulphate of potash have been given as manure. The houses have further been vaporised with sulphur, using Richards's lamps of the largest size, twenty-four lamps to each 150-feet house; the lamps were kept going for two hours. All these experimental trials have so far proved of no avail in arresting the leaf-spot disease. It seems, therefore, that so long as Cucumbers are grown under the present "highly forced" conditions of moisture and heat no remedy can be found, because what kills the disease will also kill the plant. *J. J. Willis, Harpenden.*

DANÆ RACEMOSA = RUSCUS RACEMOSUS = LAURUS ALEXANDRINA (ALEXANDRIAN LAUREL OR BAY).—(See enquiry on p. 468).—"Supposed to be the plant with which the ancients crowned their victors and poets. The stalks of this, being very pliable, may be easily wrought into coronets for this purpose, and the leaves of this plant having a great resemblance to those which are represented on the ancient busts, seem to confirm this opinion." The above is quoted from Miller's *Gardeners' Dictionary*. In Potter's *Antiquities of Greece*, vol. i., p. 446, of the Olympian Games it is stated: "the original [game] was only a race . . . the victor was crowned with an Olive garland, which was not composed of the common Olive branches, nor the natural product of that country, but brought from the hyperborean Scythians, and planted near Olympia, where it flourished, though not after the manner of other Olive trees, but spreading out its boughs more like a Myrtle. . . . Garlands given to victors in these games were always composed of it, and it was forbidden under a great penalty to cut it for any other use." Of the Pythian Games it is recorded that "Aristomenes was crowned with Laurel that flourished upon Mount Parnassus, but at the first institution of these games the victors were crowned with garlands of Palm or of Beech leaves." In the Nemean Games the victors were crowned with Parsley. Parsley was the conquering ornament of the Isthmian sports, but garlands of Pine-leaves were likewise used, and afterwards the use of Parsley was discontinued. Another quotation of interest is from the *Treasury of Botany*, above the well-known initials "M. T. M.":—"Under the common name of Laurel many very different plants are met with in gardens; but Bay or Noble 'Laurel (Laurus nobilis) is the only one which is properly so called. . . . It is one of the plants called Daphne by the ancients. The branches of this plant were likewise used to form the crowns placed on the heads of the heroes of antiquity, and on the statues of the gods; hence, perhaps, the name, from *laus* (praise), and also the specific name, 'noble.'" Seeing that the revival of the Olympian Games, according to Callimachus, took place about 828 B.C., it is not surprising that there is some difficulty in determining the particular plants used then by the ancient Greeks for making the crowns or garlands for distinguishing the heroes of the Olympian Games. *John E. Jefferies, Oxford.*

AUDIT OF CHRYSANTHEMUMS.—This as given by Mr. H. S. Kemp on p. 453 is very interesting but hardly correct in the statement that the various positions are obtained by the number of times shown. Should it not be "by the number of times mentioned in the reports given by certain papers"? It is well known that compared with many varieties not mentioned, Madame Carnot, Mrs. Mease, and Mrs. Bryant have been shown in noteworthy form scarcely at all, and from some important shows were entirely absent. They were met with much less frequently than Miss Olive Miller, Ethel Fitzroy, and Sensation. In some large exhibitions these have each appeared in good form more than the minimum number of times mentioned (twelve). I made notes of the number of exhibits certain varieties appeared in the three most important shows in the kingdom—Crystal Palace, Birmingham, and Edinburgh. Bessie Godfrey was shown in sixty exhibits at the first-named, and forty at Edinburgh; F. S. Vallis almost as many; Mafeking Hero was in five of the six exhibits in the most important class, besides twenty-five others in the same show. It also appeared twenty-seven times at the Crystal Palace, and about the same number at Birmingham. Henry Perkins was shown in excellent style more often than Mrs. Mease, and among novelties I noted Souvenir de Madame Benson and Mrs. C. Beckett more than four times. H. S. Silsbury is without doubt the finest novelty of last season, but I believe others will prove superior to those honoured by inclusion in the best six. *W. J. G.*

THE TRAINING OF YOUNG GARDENERS. — It is not surprising that someone has been impressed by the remarks of "J. G. W." on p. 411, and no doubt Mr. C. Buckland feels somewhat relieved after giving us his little story on p. 453 about the smart young foreman who had never touched a spade to use it. This man must have received his training in some very funny gardens, for even in the glass department the spade is indispensable; and I venture to say that whilst Mr. Buckland was looking for the specimen to suit his purpose, he might have easily found a dozen foremen who would have been only too pleased to discuss with him the proper use of the spade in the way of trenching, root-pruning, planting, &c. Young gardeners of to-day are often called upon to take over the charge of gardens that have drifted into a most deplorable condition, which points plainly to the fact that amongst the old school there were a great many who not only despised the use of the spade and hoe, but in many other ways were very inefficient. *W. C. R.*

—— On p. 453, "W. C. R." takes exception to remarks of mine in a former issue; but I think it would have been more appropriate to point out a little more clearly the particular remarks which, in his opinion, "have no foundation." Naturally no one expects that all will agree with any one statement made, but I have had confirmation of my views from friends and also from total strangers. After over twenty years' experience in medium-sized and large gardens I again say most emphatically that a great many young gardeners are deficient in many branches of outside work. But here let me say that I do not think it is a case of being "too particular," as I have generally found, if put to them properly, that they are usually anxious to have a turn at all branches of the profession; but I think that in the training of young gardeners too much is made of the glass department. With reference to the remarks of "W. C. R.," "that almost the whole of our summer bedding, as well as many other flowering plants, &c., are the produce of this [the glass] department," and the allusion lower down to the "reductions of labour in gardens," where such reductions have unfortunately been made, I would say that much labour is practically wasted in the production of huge quantities of Pelargoniums, Alternantheras, Iresine, and such-like tender plants, to the exclusion of many beautiful and quite hardy perennial plants, which are not utilised nearly as much as they might be, and which do not require much room and attention under glass, at a time of the year when the labour thus saved may be put to very good use in the outside departments in getting work generally in a forward condition for the busy months of spring and early summer. *J. G. W., Bessborough.*

JASMINUM PRIMULINUM.—Mr. Mayne (p. 441) remarks that this species is "said to be quite hardy." It is certainly true that when Messrs. Veitch distributed it they said, "It is hardy in this country, and at our Coombe Wood Nursery has resisted 16° frost on a north wall." Unfortunately I cannot bear testimony to its hardiness, as a fine plant on a sheltered west wall here was killed to the ground in November, when we registered 25° frost. This plant was in full growth when the frost came, and had I anticipated such severe weather I should have taken care to have had it adequately protected. It is disappointing to find that this species will be unsuited for this part of the Midlands, as its free and graceful growth and floriferous habit make it a most desirable wall plant. The severe frost coming so suddenly did a great amount of damage in this neighbourhood (which is rather low lying), and I am a little surprised to find that a large old plant of Buddleia globosa, 10 feet high, has been killed to the ground. *Arthur R. Goodwin, The Elms, Kidderminster.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

January 3.—The first meeting of the Committees of this Society in 1905 was not accompanied by a large display of exhibits. This is nothing unusual in the month of January, but in the old Drill Hall the smallness of the display was not so apparent as in the new and more spacious Hall in Vincent Square. Visitors on Tuesday last were more impressed with the size and light appearance of this building than they had been hitherto, yet there were several very handsome groups of Cypripediums and other Orchids, also of ornamental foliage and flowering plants.

The Orchid Committee recommended two Botanical Certificates and four Awards of Merit to novelties; the Floral Committee an Award of Merit to a variety of Chrysanthemum; and the Fruit and Vegetable Committtee Awards of Merit to an Apple and a Pear. At a meeting held in the afternoon forty-two new Fellows were elected.

Floral Committee.

Present: H. B. May, Esq., in the chair; and Messrs. C. T. Druery, Jas. Hudson, Jno. Green, Jas. Walker, Geo. Nicholson, J. A. Nix, H. J. Jones, G. Reuthe, Chas. E. Shea, C. R. Fielder, Chas. Dixon, W. Howe, H. J. Cutbush, R. C. Notcutt, Chas. E. Pearson, Geo. Paul, W. P. Thomson, E. H. Jenkins, and W. J. James.

A number of vases was shown furnished with flowers of a white Japanese Chrysanthemum named Lady Belper, shown with long stems, there being three, four, and five flowers on each stem. The flowers came from Lord Belper's garden near Derby (gr., Mr. W. H. Cooke), who stated that the variety is an Australian seedling. Flowering so well at this late season it is valuable.

Messrs. H. Cannell & Sons, Swanley, staged flowering plants and sprays in vases of Moschosma riparium. The inflorescences were pleasing and well developed (Cultural Commendation).

Messrs. W. Wells & Co., Ltd., Earlswood Nurseries, Redhill, Surrey, displayed some vases of Chrysanthemums, principally of "single" and "quilled" varieties.

Messrs. Hugh Low & Co., Bush Hill Park, Middlesex, staged three baskets of a pleasing variety of Cyclamen named "Low's Salmon," also vases containing varieties of these flowers, and plants of Asparagus medeoloides.

Messrs. Wm. Cutbush & Son, nurserymen, Highgate, N., set up a collection of alpine plants, backed with a number of small shrubs—Conifers, Pernettya in fruit, Daphne mezereum, Eupatorium Weinmannianum, and similar plants suitable for the rock-garden. Iris Histrio, I. sophenensis, I. Vartani, and I. Heldreichi were exhibited in flower (Silver Banksian Medal).

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, staged an excellent collection of greenhouse plants, Ferns, Azaleas, Primula obconica, P. kewensis, Daphne indica alba, Erica melanthera, Eranthemum pulchellum, &c. Many choice specimen Ferns were introduced into the group, the whole of which was arranged with excellent taste (Silver Flora Medal).

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, set up a number of greenhouse plants, Coleus thyrsoideus, Moschosma riparium (flowering well in small pots), Jacobinia chrysostephana, and several baskets of the winter-flowering Begonias, B. Agatha, Julius, &c. Gesnera (Nægelia) exoniensis was shown with the inflorescences about to open, the handsome foliage being not the least decorative character of the plants (Silver Banksian Medal).

A handsome group of plants of Euphorbia jacquiniæflora was displayed by Mr. Beckett, gr. to Lord Aldenham, Elstree. This old garden plant was plentifully flowered, the sprays being very bright in appearance, and well set off by a number of Palms, Ferns, &c., introduced into the group for effect (Silver Flora Medal).

Award of Merit.

Chrysanthemum Market Gold. — This is a rich golden-yellow-coloured decorative or Japanese variety, which from its habit is considered to be valuable for market purposes.—Shown by Lord ALDENHAM, Elstree (gr., Mr. Beckett).

Orchid Committee.

Present: Harry J. Veitch, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), J. Gurney Fowler, De B. Crawshay, J. W. Potter, Francis Wellesley, Jeremiah Colman, W. Boxall, J. W. Odell, W. H. Young, H. A. Tracy, A. A. McBean, G. F. Moore, R. G. Thwaites, H. T. Pitt, J. Charlesworth, H. Little, and F. W. Ashton.

There was a far better show of Orchids than the inclement weather seemed to foreshadow, and the meeting was remarkable by reason of the extraordinarily fine group of magnificently-grown specimens of Orchids from the famous collection of Captain G. L. HOLFORD, C.I.E., Westonbirt, Tetbury (gr., Mr. Alexander), for which the Society's Gold Medal was awarded, and the Lindley Medal for excellent culture voted. The group, which extended the whole length of the central staging of one side of the Hall, was composed principally of large specimens of the best varieties of C. × Lecanum, C. insigne, and other handsome Cypripediums, the specimens bearing in the aggregate some 500 flowers. Among the best noted were C. × Leeanum Holford's variety, a dark-coloured and finely marked form with twenty flowers; C. × L. giganteum, with twenty-four and sixteen flowers; C. × L. Westonbirt variety, with fourteen flowers, and other forms equally good. C. × J. Howes bore eleven large blooms, C. × nitens superbum, fifteen, and several forms of C. × aureum and C. × Sallieri from five to ten flowers. Among the rarer specimens of Cypripediums noted were several very massive forms of C. × Hera, the best of which were the new and fine varieties "Marion" and "Joan," both handsome flowers and finely marked; C. × Actæus langleyense was a pretty light-coloured hybrid which had previously received an award; C. × Alcibiades (Leeanum giganteum × Mons. de Curte), a bold flower of good quality; C. × Scipio (Sallieri Hyeanum × Mrs. Tautz), an improvement on C. × Sallieri aureum; and good examples of C. × Charlesianum, C. × Fascinator, C. × Tityus (six flowers), and the best forms of C. insigne. The centre of the well-arranged group was made up of good specimens of Oncidium tigrinum, Lælia anceps, L. a. Sanderiana, L. a. Amesiana, and a few good Odontoglossum crispum; and at intervals were fine specimens of Lælia autumnalis, one specimen of the large and finely-coloured "Westonbirt" variety having seven spikes, bearing together twenty-three flowers of bright scarlet colour; on the front row were several good specimens of Sophronitis grandiflora.

Messrs. CHARLESWORTH & Co., Heaton, Bradford, were awarded a Silver Flora Medal for a good group in which the main feature was Lælio-Cattleya × Charlesworthii, about thirty plants of it, some of them with several strong spikes being used, their bright coppery-orange coloured flowers with ruby-purple labellums giving a very bright effect. With them were a plant of the pretty L.-C. × Andromeda with primrose-yellow flowers with claret-coloured labellums; several good Odontoglossum crispum, O. × Hallio-crispum, several of the pretty white-and-rose Trichopilia suavis, &c.

Mr. J. CYPHER, Cheltenham, secured a Silver Flora Medal for a remarkably good group of rare Cypripediums, all exceptionally well grown and flowered. The group included a selection of the best forms of Cypripedium insigne, C. × Lecanum, C. × aureum, and other winter-blooming kinds. Specially noteworthy were C. insigne "Harefield Hall," C. i. Sanderæ, C. i. Sanderiannm, and C. i. Oyama, the last-named being a singular and beautiful variety of the C. i. Bohnhoffianum class in which the spotting is suppressed and the peculiar pale rosy-brown colouring disposed in close reticulation and tinting. Others noted were C. × aureum, Lambianum, like C. a. Surprise, but with an emerald-green tint; C. × Phœbe, C. × Mme. Jules Hye, C. × Tityus, C. × Swinburnei magnificum, Trichopilia suavis, varieties of Lælia anceps, and good Masdevallia Schroderiana.

Messrs. SANDER & SONS, St. Albans, staged a small group in which were a good example of Cypripedium Rothschildianum, a pretty light form of C. × Helen II., C. × Lucienianum, C. × aureum virginale, and two other good varieties of it; C. × exquisitum (exul × insigne Chantini), and a very remarkable form of C. insigne, with the ground colour of C. i. Bohnhoffianum, but with a rose-flush and rose-coloured spotting running into the white upper half of the dorsal sepal.

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed cut spikes of Lælia anceps Mrs. Jeremiah Colman, a good and richly-coloured flower; L. a. alba. and a strong-branched spike of Calanthe × Wm. Murray.

Messrs. HUGH LOW & Co., Enfield, showed Cattleya Trianæ Alpha, a good variety with broad, crimped petals; Cypripedium × Mrs. Tautz, C. × Prewetti, C. × nitens, Ball's variety; C. × Madame Geo. Truffaut, and other Cypripediums.

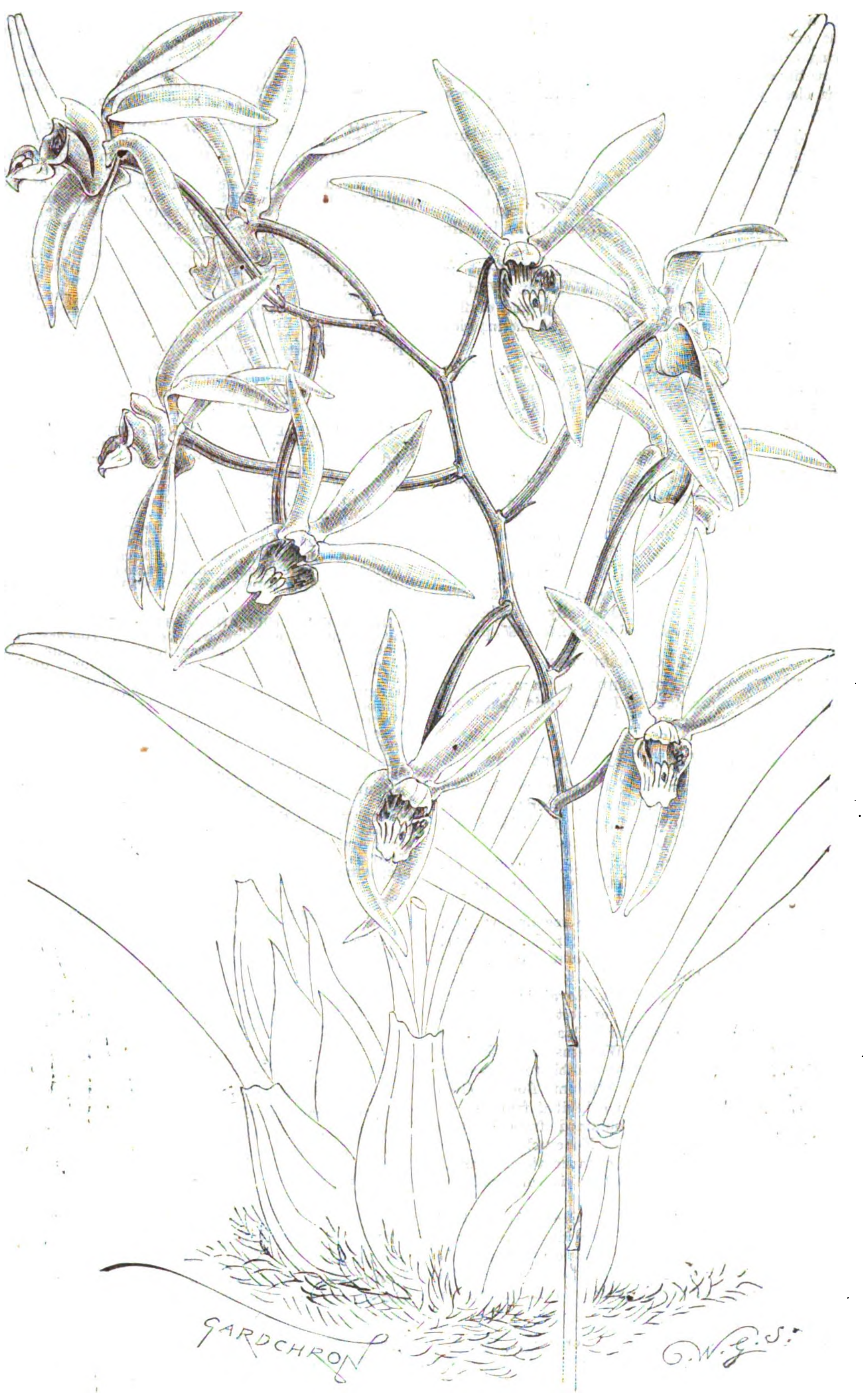


FIG. 6.—DENDROBIUM TRIFLORUM (CYMBIDIOIDES).
(Awarded a Botanical Certificate on Tuesday last.)

G. F. MOORE, Esq., Bourton-on-the-Water (gr., Mr. Page), showed Cypripedium × Amy Moore (Sallieri aureum × insigne maximum), a large yellowish flower distinctly spotted, and with a white tip to the dorsal sepal; and C. × Leeanum Fowlerianum.

FRANCIS WELLESLEY, Esq. (gr., Mr. Hopkins), sent Cypripedium insigne Hopkinsianum, Lælia anceps Amesiana Wellesley's variety, and two others (see Awards).

AWARDS OF MERIT,

Cypripedium × *Memoria Jerninghamiæ*, from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A noble hybrid of unrecorded origin. The flowers have the massive form of some of the darkest C. × aureum, but with a thicker texture and other characters suggestive of one of the hybrids of C. Drurii, perhaps C. × Winnianum, being one of the parents. There is a charming undulation to the segments of the flower, and altogether it has a novel and attractive appearance. The dorsal sepal is pure white with a small purple base from which ascends some stout emerald-green rays, the middle of the sepal having a broad purple band. Petals and lip honey-yellow tinged with purple-brown, the margin of the lip being clear yellow, and the surface of the flower very glossy.

Cypripedium × *westfieldiense* (Leeanum superbum × Pollettianum), from Francis Wellesley, Esq. (gr., Mr. Hopkins).—A fine flower with large white dorsal sepal with a small green base, the greater part of the white area being covered with lines of bright rose irregular spots. Petals and lip yellowish, heavily tinged with dark mahogany-red.

Cypripedium × *Alcibiades* (Leeanum giganteum × M. de Curte), from Captain G. L. Holford, Westonbirt (gr., Mr. Alexander).—Flower large and of fine substance, the showy white dorsal sepal having rich purple markings.

Dendrobium Phalænopsis Chardwar. var., from G. F. Moore, Esq., Bourton-on-the-Water (gr., Mr. Page). Flowers of perfect shape and of a bright magenta rose colour.

BOTANICAL CERTIFICATE.

Dendrobium triflorum, from F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin. The plant often found in gardens named D. cymbidioides. The spray sent had seven cream-white flowers with red and yellow markings on the lip (see fig. 6).

Aerides Ortgiesianum, from F. W. Moore, Esq., Glasnevin. A species with greenish-white flowers, slightly marked with rose. Originally described by Reichenbach, in the *Gardeners' Chronicle*, 1885, p. 501.

CULTURAL COMMENDATION

to the Rt. Hon. Lord Rothschild, for a magnificent eight-branched inflorescence of Phalænopsis Aphrodite, with nearly fifty flowers.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman); and Messrs. Jas. Cheal, Jas. Gibson, S. Mortimer, Alex. Dean, Ed. Beckett, H. J. Wright, J. Willard, W. Poupart, Geo. Kelf, and Owen Thomas.

Mr. B. Ashton, Lathom Gardens, Ormskirk, exhibited tubers of a large, flat-shaped Potato, named Earl of Lathom.

Some large cooking Apples of a seedling variety, named Lord Belper, were shown by Mr. W. H. Cooke, gr. to the Right Hon. Lord Belper, Derby. The fruits were deeply ribbed.

Messrs. Jas. Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, exhibited fruits of a small-sized Pear named Winter Williams, raised from a cross between the varieties Williams' Bon Chrétien and Beurré Bachelier. It is remarkable for possessing a flavour identical with that of Williams' Bon Chrétien in September. The same firm exhibited fruits of an Apple named G. Wythes, obtained from a cross between the varieties Peasgood's Nonesuch and Cox's Orange Pippin. The fruits are of moderate size, round shape and good colour. The flesh is soft and the flavour moderate.

W. Shuter, Esq., 22, Belsize Grove, Hampstead (gr., Mr. J. Armstrong), exhibited a dozen bunches of Black Alicante Grapes. The fruit could hardly be regarded as well finished, this fact being undoubtedly due to the proximity of the gardens to the Metropolis.

AWARDS OF MERIT.

Apple Fenn's Wonder. — This is a large kitchen variety, the fruits of which are slightly ribbed and very highly coloured on one side, and only less so on the other side. It would probably make a good market Apple.—Shown by the Earl of Stradbroke, Henham, Wangford, Suffolk (gr., Mr. T. Simpson).

Pear Santa Claus.—Ripe fruits of a Pear bearing this name were shown by Col. Brymer, M.P., Ilsington House, Dorchester. The fruits were of moderate size, and suggestive of Beurré Diel, but had not the "grittiness" usually present in that variety. Santa Claus is said to have come from Belgium about thirty years ago, and as this name has only now been given it, the variety may still be known in Belgium under another name.

GARDENERS' DEBATING SOCIETIES.

WARGRAVE GARDENERS'. — The last meeting of 1904 was held on Wednesday, December 21, when Mr. J. Bothy, gardener to the Rev. H. M. Wells, of Scarlets Park, gave an interesting exhibition of lantern slides and photographs of beautiful plants and views of various gardens in the neighbourhood. A short description was given of each view as it appeared on the screen. A number of Chinese views was also shown, from the negatives taken by Mr. R. Wells, who spent some time in the Far East. These were very interesting, as they gave good ideas of the Chinese methods of tillage, &c. Mr. Robbins showed some good stalks of Brussels-Sprouts.

BATH AND DISTRICT GARDENERS' SELF-HELP AND DEBATING.—The fortnightly meeting was held on the 23rd ult., the subject for discussion being "The Cultivation of the Potato, its Diseases, &c. The debate was opened by Mr. Waters, who gave details of the history and culture of Potatos. Attention was directed to the famous Northern Star variety, and some remarkable personal experience with it were related. Mr. Sparks gave some useful observations on spraying as a preventive of disease. A suggestion that the Society should procure a sprayer next year, and lend it to the members at a small charge, was very favourably received. There was a good display of Potatos at the meeting, no fewer than thirty-two varieties being sent by Messrs. J. C. Wheeler & Son, nurserymen, Gloucester, who, in addition, sent two varieties of Onions and a collection of Primulas. The treasurer, Mr. O. G. McLaren, announced a presentation of gardening books to the Society given by a gentleman who wished to remain anonymous. Sixteen new members were elected, making the total number of members 118. *T. P.*

EGHAM AND DISTRICT GARDENERS'.—At a meeting of this Society, held on December 21, a paper was read by Mr. G. Baskett, of Wood Lea, Virginia Water, on "The Rose Garden." Mr. Baskett, after referring to the history of the Rose, gave detailed information with regard to selecting the most suitable site, the formation, soil, planting, and arrangements of the Rose-garden; the most suitable varieties of Roses to grow, and the best methods of pruning the various species of Roses. A discussion ensued in regard to draining "other than water-logged soils;" also as to the advisability of earthing dwarf Roses as a protection during severe weather.

REIGATE, REDHILL AND DISTRICT GARDENERS'.—The fortnightly meeting was held on Tuesday, December 20, Mr. W. P. Bound occupying the chair. The subject for debate was "Successes and Failures during 1904." The discussion was led by Mr. Herbert, of the Gardens, Nutfield Court. There were about eighty members present, of whom a number took part in the proceedings. Mr. Herbert was able to report many successes. Crops of fruit were undoubtedly good, not only in this district, but almost everywhere in the country; the quality was also exceptionally good. Vegetables were in no way lacking in merit; reports of splendid crops were generally noted. The Onion-fly had been troublesome in some districts. Celery was generally good, the Celery-fly being less noticed than in 1903. Peas were also good: the variety The Gladstone was highly spoken of for late cropping. The Chairman strongly advocated trenching as a means of preparing ground. *C. L.*

SCHEDULES RECEIVED.

INTERNATIONAL EXPOSITION of the Société d'Horticulture de Genève from September 6 to September 12, 1905, at Geneva.

CULTURAL MEMORANDA.

SOLANUM JASMINOIDES.

THIS very desirable greenhouse climbing plant is easily propagated by cuttings from the young growths, these being inserted in efficiently crocked 3-inch pots filled with a compost consisting of three parts light sandy loam and one of leaf-mould, plunged in a gentle bottom-heat, watered, and kept close until rooted, when they should be potted off singly into 3-inch pots and grown on in the usual way. Young plants may also be raised from seed sown thinly in pots, afterwards treating the seedlings as indicated above. Some time ago the writer saw in the lofty and elegant conservatory attached to Watermouth Castle, near Ilfracombe, a plant of this white and sweetly-scented greenhouse perennial in grand flower; the flowering shoots, hanging loosely and gracefully from the roof, were very effective.

ENQUIRY.

MYROBALAN PLUM. — Can any reader of the *Gardeners' Chronicle*, who has planted the Myrobalan Plum for hedging purposes, tell me if it is a good substitute for Quick (Thorn)? Nurserymen are reluctant to give much information concerning it. Any hints on its culture, etc., will be gratefully received. *Reader.*

ANSWERS TO CORRESPONDENTS.

⁂ EDITOR AND PUBLISHER. — Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

BOOKS: *Journeyman. Elementary Botany*, by Percy Groom. It can be obtained from our Publishing Department.

BRITISH GARDENERS' ASSOCIATION: *J. C., Headingly, Leeds.* Your request for rules and particulars of this Association has been forwarded to the Secretary, Mr. W. Watson, Kew Road, Kew.

FERNS: *E. B.* The appearances are those caused by thrip. Weak tobacco-water may be used and frequently repeated. The atmosphere of the house is probably too dry.

HOLY THORN: *Nuneham.* You are doubtless referring to what is popularly known as the Glastonbury Thorn, an early-flowering variety of Cratægus oxyacantha, known as C. oxyacantha præcox in gardens. It is popularly supposed to have sprung up at Glastonbury from the "staff" of Joseph of Arimathea, and to produce its blossoms on Christmas Day.

NAMES OF FRUITS: *C. H. W.* Glout Morceau.—*S. B., Thrapston.* Kindly send other specimens, as your last consignment, and those of some other Correspondents, appear to have been lost in the post, doubtless owing to the press at Christmas, and to the confusion caused by the fog.—*G. H.* 1, Tower of Glamis; 2, London Pippin; 3, Herefordshire Pearmain.—*F. E. Feear.* 1, Minchull Crab; 2, Whiting Pippin; 3, Claygate Pearmain; 4, Court of Wick; 5, Bramley's Seedling; Pear, Nouvelle Fulvia.

NAMES OF PLANTS: *T. B. A.* Thunbergia laurifolia.—*E. B.* 1, Ornithogalum lacteum; 2, Veltheimia viridifolia.—*S. H.* Begonia ricinifolia, manicata; Polypodium glaucum; Adiantum formosum; the large frond with small pinnæ, Adiantum decorum.—*A. S.* Oncidium sphacelatum; Phalænopsis Schilleriana, and Cattleya Percivaliana.—*A. B. C.* 1, Azalea indica alba plena; 2, A. indica alba; 3, not recognised; 4, A grass, not recognised; 5, Selaginella denticulata of gardens; 6, Eupatorium micranthum [ligustrinum].—*G. H.* Ilex dipyrena.—*J. M.*—Salvia leucantha; Dianthus superbus.

SPRUCE GALLS: *T. R.* The work of an insect (Chermes) allied to that known as American blight. It is very common, but we are unable to suggest any "cure," beyond removing the affected shoots in spring and burning them.

TREE FERN: *N. P. J.* Without making an examination of the plant, which you describe as having grown for thirty years in your conservatory, we cannot definitely say what has caused it to droop. You state, however, that the roots are contained in a wooden tub, and that it is possible that the plant was neglected during the period that elapsed between your head-gardener's death in July and the appointment of his successor in October. If the roots were allowed to suffer from drought this would naturally cause the young fronds to droop, and if the check was sufficiently severe, they will wither entirely. But Tree Ferns have a wonderful amount of vitality, and your specimen will most likely develop fresh fronds, although it loses all those that have developed. Do not disturb the roots at present, but let the plant be given care for a time in the same conditions as heretofore, and await the result hopefully.

COMMUNICATIONS RECEIVED. — H. S.—J. H. — A. B. W. H. S.—F. C.—G. T.—Fred. Burvenich, Ghent—W. J. W.—Jason—J. S.—J. G. W.—H. W., Trevince—A. D. H.—W. W.—Exhibitor—W. F.—J. C.—S. A. Constant Reader—Mr. T., Worsley—G. J. I.—H. A. Pettigrew—J. S.—J. D. C.—H. E. C.—De B. Crawshay—J. B. L.—N. S.—H. & S., Germany—T. Humphreys—J. V. & Sons.

(*For Markets and Weather, see pp.* xiv. *and* xv.)

THE
Gardeners' Chronicle

No. 942.—*SATURDAY, Jan.* 14, 1905.

CONTENTS.

Apple census, the ... 26, 28
Asparagus Sprengeri ... 28
Benevolent Institution, Gardeners' Royal 25, 28
Board of Agriculture, leaflets of the 28
Books, notices of—
  Book of Topiary ... 26
  Pigs for Profit ... 25
Camellia tree, a famous 25
Chrysanthemum grafting 25
Chrysanthemum sport, a 28
Cucumber disease ... 28
Cultivation, experimental 20
Cypripediums at Manchester 27
Dahlia "The Mikado" 29
Florists' flowers—
  The Hollyhock ... 21
Fossil plants 29
Gardeners' Association, the British ... 25, 28
Gardening papers, notes on English 25
Hardy plants—
  Gunnera scabra major 18
Highbury, Mr. Chamberlain's garden at ...
Lawns, the manuring of 17
Manchester Botanical Gardens... 25
Myrobalan Plum, the... 29
Nicotiana Sanderæ × ... 24
Lubbers, Louis 24
Obituary—
  Stirling, John R. ... 30
  Wade, Arthur W. ... 30
Orchid notes and gleanings—
  Odontoglossums at Arddarroch 19
Orchid seedlings, the raising of 32
Phylloxera eggs destroyed by lysol ... 24
Plants, new or noteworthy—
  Malortiea Tuerckheimii... 19
Plant novelties in 1904 . 29
Potato culture in Cornwall 30
Rainfall at Rothamsted during 1904 26
Scientific Committee ... 30
Societies—
  Gardeners' Debating. 31
  Horticultural Club ... 30
  Linnean 24
  Manchester & North of England Orchid. 30
  National Sweet Pea... 30
  Royal Horticultural 26, 30
Spraying, the importance of 24
Stock-taking 25
Week's Work, the—
  Flower garden, the... 23
  Fruits under glass ... 23
  Hardy fruit garden... 22
  Kitchen garden, the. 23
  Orchid-houses, the ... 22
  Plants under glass ... 23
Widdringtonia Whytei. 18
Wiring walls for fruit-tree training 32
Woburn fruit farm, the 24

ILLUSTRATIONS.

Apple, Fenn's Wonder... 20
Currant-bud mite, shoots affected with the 31
Cypripedium plants, three well-flowered 27
Pear Santa Claus... 21
View in the recently-planted pleasure gardens at Highbury, Birmingham, the residence of the Right Hon. Joseph Chamberlain, M.P. (Supplementary Illustration).
Widdringtonia Whytei, adult and primordial forms of... ... ... 18, 19

THE MANURING OF LAWNS.

ITS EFFECT IN DESTROYING WEEDS

NO question is more frequently asked than that involving the demand for information as to how to improve the grass of a lawn, of a tennis-court, or a golf-green; how to get rid of moss, or to eradicate Plantains and Daisies; how, in fact, to obtain a smooth, elastic turf of grass instead of an exiguous and miscellaneous collection of weeds. There are various nostrums for the purpose, but the plain and simple recipe of putting on manure nearly always meets with objections. People who load up their beds and borders with manure, though but a small crop be taken off every year, yet seem to suppose that a lawn mown once a a week during the growing season will support itself, and that the grass will be produced out of nothing. In many of our suburban gardens also the lawn had a bad start, the thinnest of turf has been laid over a mixture of harsh subsoil and builder's rubbish, all the good soil having been piled up on the borders when it has not been sold to a neighbouring gardener. Yet still the prejudice against manure holds. "It will make the grass too coarse;" "It will bring too much Clover," are the arguments. Instead, some magic liquid is sought which will kill Daisies, Dandelions, and Plantains at a touch, and leave the grass to flourish unharmed.

Putting on one side the unlikelihood of ever obtaining rank grass on such a soil as lies beneath the majority of our lawns or golf-greens, the mere fact of the constant cutting and rolling would prevent any of the coarser grasses from getting a foothold. The particular plants we see in a piece of mixed herbage like a lawn represent the survivors of a great competitive struggle for existence in which only those plants persist that are adapted to their environment. And in this case the main factor in the environment is the recurrent rolling and close cutting. Grasses, like Cocksfoot or Meadow Foxtail, with an upright tufted habit, are badly suited by the conditions and are easily supplanted by seemingly much weaker creeping grasses, like the Poas or the dwarf Fescues.

Plenty of manure and rich soil, so far from encouraging the big coarse grasses, really gives the finer ones a much better chance, for the coarse grasses have long, spreading roots which can range deep for their food, whereas the finer grasses are wholly dependent on the surface soil, and will quickly exhaust it should its richness not be maintained by manuring. But this thesis and the all-important question of the nature of the manure to be used can best be illustrated by an examination of the grass experimental plots at Rothamsted. [The results of the experiments made at Rothamsted were first published in the "Philosophical Transactions" of the Royal Society, and were contributed by Dr. Gilbert and Dr. Masters, a summary of which is published in *Plant Life* by the last-named writer.] There, nearly fifty years ago, twenty plots, most of them half an acre in area, were marked out on the old grass-land of the park near the house, a particular scheme of manuring for each plot was adopted, which has been repeated year by year ever since with practically no alterations. The effects of this long-continued manuring in particular directions is now instantly visible in the class of herbage carried by each plot, and a walk by them in the springtime is pregnant of lessons not only for the farmer and grazier, but for the gardener who has lawns and paddocks to manage. The plots look as though they were strips of land transported from different counties, so varied is the vegetation they carry; one is all flowers, another is wholly dark green grass, a third seems to be all Clover, a fourth is white with the Parsley-like flower of the wild Chervil, yet no seed has ever been sown, the differences have all arisen from the manuring. The Rothamsted plots are laid up for hay every year, and though at first sight this may seem to prevent one from deriving much information from them as to the management of lawns, it will soon be seen that the same principles apply in one case as in the other.

The plot to begin with is the one that has been without manure the whole time; the herbage is scanty, as might be expected, rarely much more than ankle deep even at hay-time, but the fact that strikes one most is its varied composition. All sorts of flowering plants are to be seen; Hawkweeds, Ribwort Plantain, Hard-heads, Cowslips, Scabious, Speedwell, Bird's-foot Trefoil, catch the eye most prominently; the grasses are poor and stunted, among them the pretty Quaking Grass (*Briza media*) is the most prominent. In winter time there is plenty of moss to be seen all over the plot. A complete botanical analysis made in 1903 showed that only 52 per cent. of the herbage by weight consisted of grasses, the Clovers and other leguminous plants made up 8 per cent., while the remaining 40 per cent. consisted of miscellaneous species or weeds. The variety of the vegetation is to be seen in the fact that forty-seven different species were identified in the herbage from this plot. Examine now, by way of contrast, some of the plots lower down the field which receive a complete manure containing nitrogen, phosphates, and potash, but in which the nitrogen predominates. At once there is a big crop of strong-growing herbage, which has yielded on an average 2, 3, and even 3½ tons of hay per acre over the whole period of forty-seven years. But the character of the herbage has been even more strikingly altered than its amount; the forty-seven species have been reduced to twenty, or indeed practically to four on the most heavily manured plot of all, and these species are all grasses—the Clovers and the weeds have been crowded out. If we turn to the plot on which, instead of nitrogen, a purely mineral manure containing only phosphates and potash is supplied, we see another great change; the Clovers predominate—red and white and the allied Meadow Vetchling—and the grasses only occupy a subordinate position. In some seasons the leguminous plants will make up more than half of the herbage at haytime. On another plot we may see the effect of applying superphosphate and sulphate of ammonia without any potash; we have an exclusively grassy herbage, with not a particle of Clover and very few weeds. The grasses also are all shallow-rooted kinds, more than half of the whole consists of Sheep's Fescue, Sweet Vernal Grass being also abundant; very much the kind of vegetation, in fact, we want to see upon a lawn. The shallow-rooted nature of the grasses is due to the fact that the manures used are such as are arrested by the soil close to the surface, consequently the shallow-rooted species gain an advantage. If instead we employ nitrate of soda, which sinks down with the rain, deep-rooted grasses like Soft Brome grass are favoured and become prominent in the herbage.

Without going into details we may draw the following lessons from the Rothamsted plots:—

1. Weeds, moss, and a varied herbage indicate poverty of the soil. In rich soil the grasses will crowd out everything else; in poor land the weeds can beat the grasses.

2. Nitrogenous manures encourage the grasses and depress the Clovers.

3. Mineral manures and particularly potash encourage Clover and allied plants.

4. Of the nitrogenous substances ammoniacal manures encourage shallow-rooting, nitrate of soda the deeper-rooting grasses.

Let us apply these principles to practice. Lawns that are intended for use as tennis-lawns, bowling-greens, putting-greens, should be made up of grass only; Clover wears too easily, gets slippery in the evening, has a different "pace," and is less true. Consequently manures containing much potash, or lime which acts as a liberator of potash in the soil, should be avoided. A mixture of superphosphate (three parts) and sulphate of ammonia (one part), at the rate of ¼ lb. per square yard, is about the best manure where the soil is loamy with a sufficiency of lime; but on thin sands and gravels, or on heavy sour clay, such a manure is rather too acid; it is better then to use a good Peruvian guano, perhaps the best of all manures for producing fine grass, or a mixture of nitrogenous fish guano with some bone-meal. Soot also is good, but soot is a manure supplying nitrogen only, and must be accompanied by some phosphate. Where the presence of Clover does not matter, as on lawns not used for games, the fairway of a golf-green, the outfielding of a cricket-field, a more general manure containing potash will grow a closer sward. A good all-round mixture should contain four or five per cent. of nitrogen, twenty of phosphates, and six to eight of potash; this, at the rate of ¼ lb. per square yard, will grow excellent grass.

Damp low-lying lawns, or putting-greens that are evidently sour and suffering from lack of lime, must be dressed with a little ground-lime or with basic slag, at the risk of encouraging a free growth of Clover for a season or two; otherwise the sourness will spread, and the herbage will begin to die in patches; the Clover that results may be troublesome at first, but will gradually give place to good grasses. So far we have spoken only of artificial manures, because they are most easy of application; they only need to be sown early in the year (February is perhaps the best month), and allowed to wash in. But on many sandy and gravelly soils perhaps the best treatment is to cover the lawn late in the autumn with a good coating of well-rotted dung, best of all from an old Mushroom-bed, and leave it there to wash in until the grass begins to grow in the early spring, when it can be swept off. The grass benefits from the humus thus introduced, as well as from the more direct plant-food; the shelter also provided by the manure for the springing grass is valuable.

In any case the great thing is to bear in mind that grass cannot be grown out of nothing; it is only by growing a lot of grass and keeping it constantly cut close, that we can establish the mat of old roots under the sward, which gives on the one hand the delightful feeling of life and elasticity, and on the other the recuperative power after wear, characteristic of the best turf. *A. D. H., Rothamsted.*

HARDY PLANTS.

GUNNERA SCABRA MAJOR.

Fine as is a well-grown specimen of the typical Gunnera scabra, with its large and handsome rough leaves, quite tropical in their effect, it shrinks into comparative insignificance when seen alongside its descendant—G. scabra major. This is a truly noble plant, reminding one in its grand dimensions of the magnificent Gunnera manicata, but with a rugged grandeur not possessed by G. manicata, though the latter is taller and makes a larger plant. This greater form of G. scabra originated, I believe, with Mr. T. Smith, of Daisy Hill Nursery, Newry, and as seen growing there it was remarkably fine. It is an improvement upon the type, and well worthy of a place in the grounds of those who appreciate such striking plants. By a pond or in the wild garden by some moist spot it would be perfectly at home. It is, however, all the better for some shelter from strong winds, as one has seen the leaves of the typical plant, sturdy as they are, wrenched off by a severe gale when in a comparatively exposed position. *S. Arnott.*

WIDDRINGTONIA WHYTEI.

This tree, known in the vernacular as the Milanji Cypress, was originally found at an elevation of 10,000 feet, on Mount Milanji, in Nyassaland (35°—36° E. long., 16° N. lat.), by Mr. Alexander Whyte. It was alluded to in the *Kew Bulletin* (1892), p. 121, and was described in detail by Dr. Rendle in the *Transactions of the Linnean Society*, May, 1894. The tree is destined to be of great importance as a timber tree in subtropical countries, if it can be adequately protected against forest fires and reckless felling. Like so many of its allies, the tree is remarkable for the varying forms of its foliage. Thus in the adult stage the leaves are small, deltoid, and closely appressed to the branch; other leaves are more elongate, linear-lanceolate, and spreading at the tips. In the seedling condition, and in what we may call the Retinospora stage, the leaves are about 1 inch long, glaucous, distinctly linear, and spreading. Of such character were the leaves, furnished us by Mr. Medley Wood (see *Gardeners' Chronicle*, August 18, 1894, p. 19), and from Kew (see *Gardeners' Chronicle*, June 16, 1894, p. 746). See fig. 7, B.

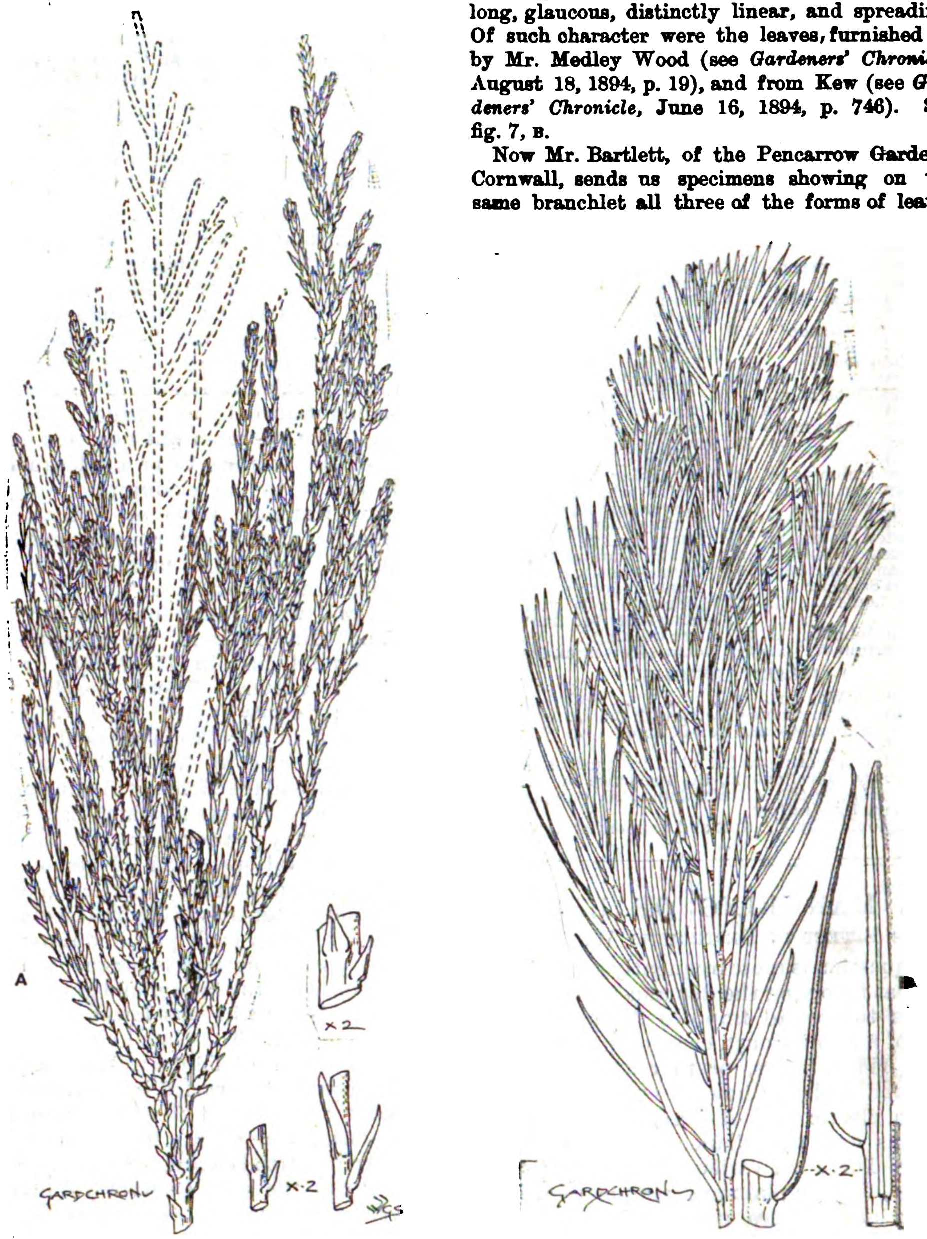


FIG. 7.—WIDDRINGTONIA WHYTEI.

A—Branch showing two forms of the adult foliage; B—Showing the primordial Retinospora-like leaves. The detached leaves of each form are shown as magnified 2 diameters.

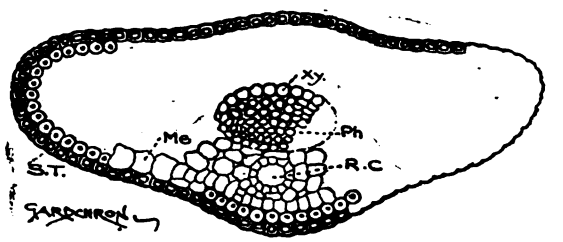


FIG. 8.—WIDDRINGTONIA: DIAGRAM SHOWING STRUCTURE OF LARGE LEAF, FIG. 7, B.

S.T., strengthening tissue; *Mc*, mesophyll; *Xy*, xylem; and *Ph*, phloëm, surrounded by a ring of endoderm; *R.C.*, resin canal.

Now Mr. Bartlett, of the Pencarrow Gardens, Cornwall, sends us specimens showing on the same branchlet all three of the forms of leaves just mentioned, but in the specimen figured, only two forms are shown on the one branchlet (fig. 7, A), whilst the other (fig. 7, B) bears the long primordial leaves characteristic of the Retinospora stage. The specimen at Pencarrow is between 7 and 8 feet in height, and is planted out in summer and removed under glass in winter. Other plants of the same species (see *Gardeners' Chronicle*, March 21, 1903) have been planted out, and passed the last winter without injury. Mr. Bartlett's specimens also showed the male catkins, which are as described by Dr. Rendle.

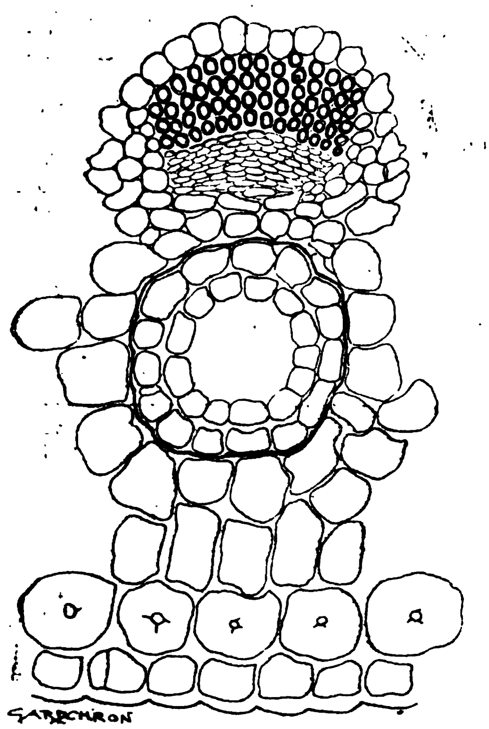


FIG. 9.—WIDDRINGTONIA: DIAGRAM OF SECTION OF LARGE LEAF, B, MORE HIGHLY MAGNIFIED.
For references see fig. 8.

It may be added that a cross-section of a primordial (Retinospora-like) leaf (fig. 8) shows it to be transversely oblong, rounded at the two extremities, with the midrib prominent on both surfaces. Beneath the outer skin or epidermis is a single layer of hypoderm or strengthening cells, S.T.; the central cylinder is elliptic, surrounded by a bundle-sheath or endoderm, and with a single fibro-vascular bundle, with the wood or xylem, XY., above, and the bast or phloëm, Ph., beneath. A solitary resin canal, R.C., traverses the cellular tissue of the leaf between the hypoderm and the central cylinder. The structure of the adult foliage is essentially similar (figs. 10, 11).

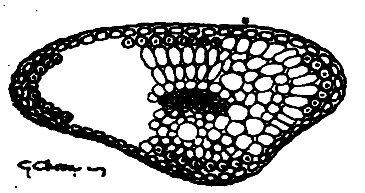


FIG. 10.—WIDDRINGTONIA: DIAGRAM OF SECTION OF SMALL-SIZED LEAF.

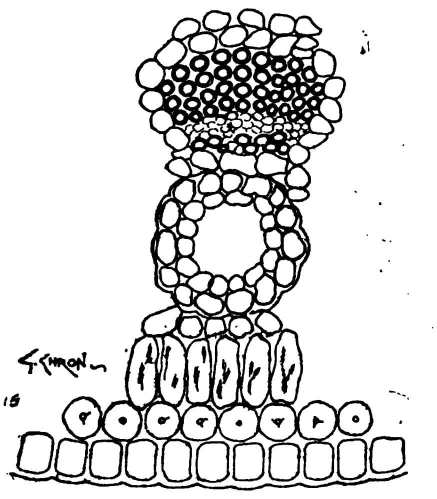


FIG. 11.—WIDDRINGTONIA: SECTION OF SMALLER LEAF, MAGNIFIED.
The structure and references are as in fig. 8.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUMS AT ARDDARROCH.

I AM often told, "These crispums, as you call them, must be magnificent and far finer when they are at home on their native tree than in cultivation. Why do you not go out to South America to see them?" I might induce a smile of incredulity on some faces if I replied, "I can see them better grown under cultivation by going to Arddarroch." It will not make people smile when I tell them it is far easier to visit the plants there, but it would make them smile, with a good broad grin of satisfaction, did they have the good fortune to see the 300 plants in Mr. R. Brooman White's No. I. house, that have been grown there for periods of various duration extending to twenty and a half years, the oldest one having been purchased at Sir W. Marriott's sale, May 20, 1884. They are plants in pots ranging from 48's (5 inches) to many of 12 inches in diameter. The "specimens" are grand indeed, and have immense bulbs, some as large as 6 inches high by 2½ across the widest part, and 1⅜ thick. There are dozens which carry four years' leaves most of them having two leaves to a bulb, and many have three; and here and there you find a plant with five years' leaves, a rare occurrence in most collections an unknown one in a great many. These leaves are not puny and soft things of pale green, but are magnificent straps of foliage whose depth of colour leaves nothing to be desired. The "tipping of leaves" here is absent, and from what cause I shall hope to show later. One Odontoglossum Andersonianum has three spikes upon one giant bulb, one spike having seven branches, each spike being thicker than an ordinary lead-pencil. Being at a dull time of year there were few in bloom, but I have so often seen the greater portion of them that I can say without any exaggeration that sixteen blooms on a spike is a common occurrence, and I know of nineteen without a branch—blooms, too, of grand substance and variety, for no "poor var." is kept in No. I.

The first idea that will occur to many people is possibly, "This is the result of some manuring." It is the result of absolutely no manuring of any sort whatever, either liquid or solid; such treatment is neither allowed nor needed at Arddarroch. The compost that Mr. Perfect uses is peat, sphagnum, and Oak-leaves in equal thirds, chopped finely and mixed. The Oak-leaves are collected when they fall, and left heaped on the ground, being used as and when required, but not in a state of rottenness, when all nourishment has left them; the sounder the leaf the more there is for the plant to feed upon. Bracken-roots are used for drainage, and then the plant is settled into the compost, the surface being of sphagnum. I do not say live sphagnum, for it does not die easily at Ardarroch.

Plenty of air is given at all or any time, for it is never so cold that the plants may not have some with beneficial results. Watering is largely done by Nature here, for the position of the house is ideal. It is placed north and south, a span-roof, whose general dimensions are 40 by 10 by 9, with two side stages, under which are two stages of Loch Long finest gravel, the path being covered by a larger size of the same; it contains three rows of 4-inch pipe on each side, has "Hit and Miss" side ventilators, also top ditto; spray pipes for use in hot weather are also in it and on the roof.

The position, partly in the ground, is one of its great points. On one side is a bank 7 feet high, the south end being also "banked" by the continuation of the slope of the hill. In the house is a 14-feet well of beautiful mountain water, softer than most rain-water, and from the natural slope of the hill the water percolates under the house, thus continually maintaining a most advantageous moisture. Sphagnum grows all over the mountains around. Loch Long is 100 feet below, and the climate is perfect; and above all Mr. Brooman White and his grower (Mr. Perfect) are always eager to take advantage of and utilise Nature's beneficent endowments.

To enumerate and describe the other branches of Orchid culture may rest for another time; it is enough to take Odontoglossums now, of which there are six houses more (and another building) full to repletion of unbloomed plants selected from all the best importations. This 25,000 plants should give some good results in blooming. Some exceedingly fine varieties should make their appearance, for if character means anything then the only question is time, which will bring its own reward that will be richly deserved, and hope unsparingly given.

The plants I have described constitute a most beautiful houseful of Odontoglossums, the names of some of which ma form a fitting termination to this article:—

O. crispum
  Angela
  Arddarroch var.
  Aurora
  album magnificum
  Erin
  Geraldine
  Mrs. Brooman White
  North Star
  Rosa
  Starlight
  Sunlight
  xanthotes White's var.
  Aimée
  Eileen
  Diana
  Peetersii
  Trianæ Reine des Belgés
  Mariæ

O ..dersonianum
  Arddarroch var.
  obstupefaciens

O. Rückerianum
  egregium (from "Tautz' collection).
  Mrs. Brooman White

O. Wilckeanum
  White's var.
  splendens
  albens

O. Hallii Charlesworthii
  loochristiense Arddarroch var.
  elegans Pollett's var.

And a great many very fine crispums (rosy and un spotted) which are numbered, not named.

De B. Crawshay.

NEW OR NOTEWORTHY PLANTS.

MALORTIEA TUERCKHEIMII, U. D.

AMONGST the dwarf Palms the genus Malortiea contains some noteworthy species. Some time ago I received from Guatemala a specimen of a new species of this genus, which is in more than one respect of great interest. This dwarf Palm has a height of about 16 inches, and bears upon its thin stems, which are only 1½ lines in thickness, a crown of fifteen leaves, which more closely resemble those of a Geonoma than those of a Malortiea. Whilst the leaves of M. simplex and M. Koschnyana are of a bright green, those of M. Tuerckheimii are dull green. The blade of the leaf of the new species is traversed on each side of the midrib by nineteen veins, which are directed forward at an acute angle; the blade itself is folded somewhat between the veins. But whilst the blade of the leaf in Geonoma is more or less bifid at the apex, in this species the apex is not bifid. It is cuneiform, about 6 inches long and 2 inches broad. The petiole is short, about 1 inch long. The margin of the blade is crenate, the crenules diminishing in size upwards and being very regular. The plant was detected near Cobán in Guatemala at an altitude of 4,500 feet above the sea-level by the German Consul Baron von Tuerckheim.

The Central American States are perhaps the richest district in Palms of the globe. Certainly there are a great many Palms as yet unknown, and I have no doubt that among them are representatives of new genera. Importers of novelties might still find here a quantity of new and rare plants. *Dr. Udo Dammer, Dahlem.*

EXPERIMENTAL CULTIVATION.

(Continued from p. 398.)

MANURES FOR SPECIAL CROPS: STRAWBERRIES:—The results of manurial experiments with Strawberries are often conflicting and puzzling, but the increased value of a larger or earlier crop is so considerable that they are worthy of all the attention which can be devoted to them. Though much work has been done there is ample room for further investigation, indeed some experiments should be repeated in other soils and situations in order to test the conclusions arrived at. Experimenters are naturally always eager to start original lines of investigation, but quite as useful work might be done by following up what others have commenced when the work has been performed in a systematic manner, and the records of results are at command. The more frequently a well-designed experiment in cultivation can be repeated, the more valuable do the observations become, and the greater the probability of arriving at reliable averages, with the elimination of errors due to local conditions.

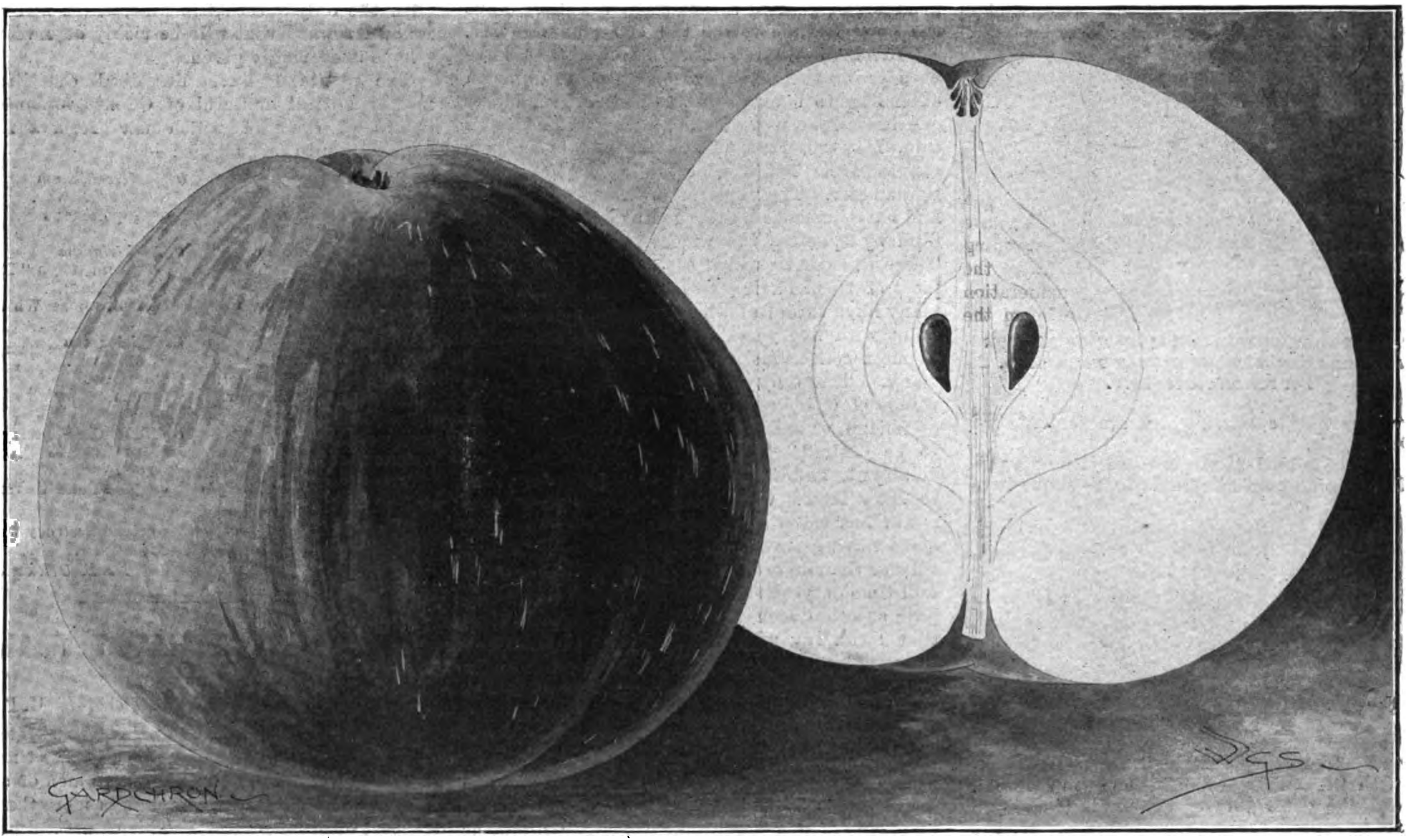


FIG. 12.—NEW CULINARY APPLE "FENN'S WONDER,"

Which obtained an Award of Merit at the Royal Horticultural Society's meeting on January 3, being shown by the Earl of Stradbroke (gr., Mr. T. Simpson)

(See also report of the meeting on p. 16 of our last issue.)

With Strawberries such repetition is especially necessary, for the varieties are numerous, and these behave differently in varied soils and positions, the consequence being that records are often divergent or even contradictory. My own experiments in the manuring of Strawberries were commenced about sixteen years ago, and I have had the opportunity of studying the matter on five widely different soils. The work of others in a similar direction has also received close attention, but we have still much to do before any conclusive results of general application can be recorded. The physical condition of the soil has more influence on the variable results than the chemical composition as determined by ordinary analysis; and this fact is being generally recognised in connection with other crops.

RUNNERS IN POTS AND OPEN SOIL.

As regards Strawberries, there is another variant which materially affects results, namely, the method and time of preparing the runners for planting. I have seen as much difference between plants of the same variety layered into pots and those rooted in the open soil, as between two varieties differing in strength and productiveness. The difference is sometimes observable for several years, and is quite as marked as that which follows extremes of manurial treatment. If experimental plots are made up of plants which differ so much at the start, it is not surprising that the results are divergent.

Again, the earliness of rooting the runners has a bearing upon the matter, for the early, strongly-rooted plants will be in a different state from those obtained late in summer, and possibly weak or stunted. This will to some extent influence the after behaviour of the plants whatever their manurial treatment may be, and is a source of error in the conclusions if plantations are formed indiscriminately of both.

PLANTING.

A point requiring attention also is the condition of the soil and the nature of the weather at the time of placing-out the runners in the plots. If in one portion of an experiment Strawberries are planted in soil moist with warm rain, and the weather is dull for a few days afterwards, these plants have all in their favour for healthy progress; but if from any cause it is impossible to complete the planting under these conditions, and it is finished under a glaring sun in a dry soil, and with the aid of the water-can to keep the plants from perishing, a serious difference may be expected in the behaviour of the plants.

These are not imaginary difficulties, for I have known cases where cultivators inexperienced in experimental work have conducted trials of Strawberries, both for manurial tests and other objects, without due attention being paid to such initial differences, and with consequent confusion of the issues.

In experiments organised and conducted by myself, I have always preferred to rely upon Strawberry-runners layered in the open soil at the earliest possible time after fruit-gathering, and planted-out under the best weather conditions. Besides this, the plants should be assorted and equalised as far as possible by rejecting the weaklings; and it simplifies the work if only one variety be taken at a time until some general results are obtained, when a collection can be tried.

STABLE MANURE v. ARTIFICIAL MANURES.

The principal practical object in manurial experiments with Strawberries is to ascertain whether the large amounts of stable or farmyard-manure can be profitably reduced or dispensed with by the addition or substitution of chemical or artificial compounds. Where stable manure has to be purchased at a cost of £9 to £12 per acre, the prospects of the grower in a bad season are not encouraging. But under the best conditions the expense is a heavy one, and if that could be reduced by half on an area of 100 acres, it would mean a substantial addition to the grower's income.

The comparison of heavy and light dressings of manure have therefore taken this form, the amounts given being per acre:—

A. 30 tons of stable manure.
B. 20 tons of stable manure.
C. " " plus phosphates and potash.
D. " " " " plus nitrate.
E. 10 tons of stable manure.
F. " " plus phosphates and potash.
G. " " " " plus nitrate.
H. No stable manure, but phosphates and potash.
I. " " plus nitrate.

The phosphates, potash, and nitrate are calculated to supply the essentials of 10 tons of manure in C and D, of 20 tons in F and G, and of 30 tons in H and I, so that chemically all the plots are on an equal basis. From a scientific point of view it would be desirable to add to these a plot receiving no manure, but practically it is not essential, as growing Strawberries without manure can only give satisfactory results under exceptional circumstances in special soils As repeatedly stated the duplication of the plots is very desirable.

RESULTS.

The chief object of these notes is to indicate the lines of experimental work, and the discussion of results would occupy too much space. But as indicating how greatly the soil characters affect such experiments, it may be briefly stated as three examples that in a very light soil I found the stable manure in the heavy dressing (A) gave considerably the best results, notwithstanding the extra cost. In a heavy soil D gave the most profitable returns, taking into consideration the expense, and in a medium fertile loam the advantage was slightly in favour of G. But it is not merely a question of total weight of crop, the actual money value depends mainly upon the size of the fruits and their earliness. In this matter I have never found artificial manures alone give as satisfactory results as stable manure supplemented by a complete mixture of minerals and nitrogenous substances in moderate quantities.

Experience differs, and it must be stated that Dr. Dyer has deduced from his experiments that the addition of chemical manures to a light dressing of dung resulted in a marked and profitable earliness. He has recorded that in 1898 the variety President, "on the plot dressed only with light dung, gave the enormous crop of 4 tons 4 cwt. per acre. When this dressing was supplemented by chemical fertilisers, including 2 cwt. of nitrate of soda, the total crop was only increased to 4 tons 7 cwt. per acre. But in the first few days of picking we gathered from the chemically manured plot nearly 700 lb. more fruit per acre than from the dunged plot, and during this time the market value of the fruit picked was at least twice that of the fruit picked during the succeeding days." This is worthy of further examination, and it is an example of how difficult it is to generalise in outdoor experiments, as the conclusions arrived at are not supported by my own observations. It must also be borne in mind that earliness alone is not sufficient, as it is possible to obtain an early crop of very small ~~and~~ almost worthless fruits, and the advanced "market price" would not avail for comparison in such a case, as I have proved by both growing and selling the crops.

POTASH SALTS.

A peculiar circumstance in the Hadlow experiments is that the use of potash salts for Strawberries has been discontinued, because "in every case the potash plots were so markedly inferior in yield and the development of the plants appeared to be so unsatisfactory as compared with that of the plants on the non-potash plots, that we resolved to withhold potash salts in future." I have tried potash in various forms in conjunction with phosphates, but usually found that on heavy soils (such as that at Hadlow) the former was without any appreciable effect, and it was only when excessive quantities of kainit or muriate of potash were used that ill-effects were noted, and these then took the form of real injury to the plants. It would be interesting to know what form of potash was employed in the particular instance named by Dr. Dyer, as I have not observed any injury follow the use of sulphate of potash in ordinary dressings; on the contrary, in medium and light soils, a distinct advantage has been gained. *R. Lewis Castle.*

(To be continued.)

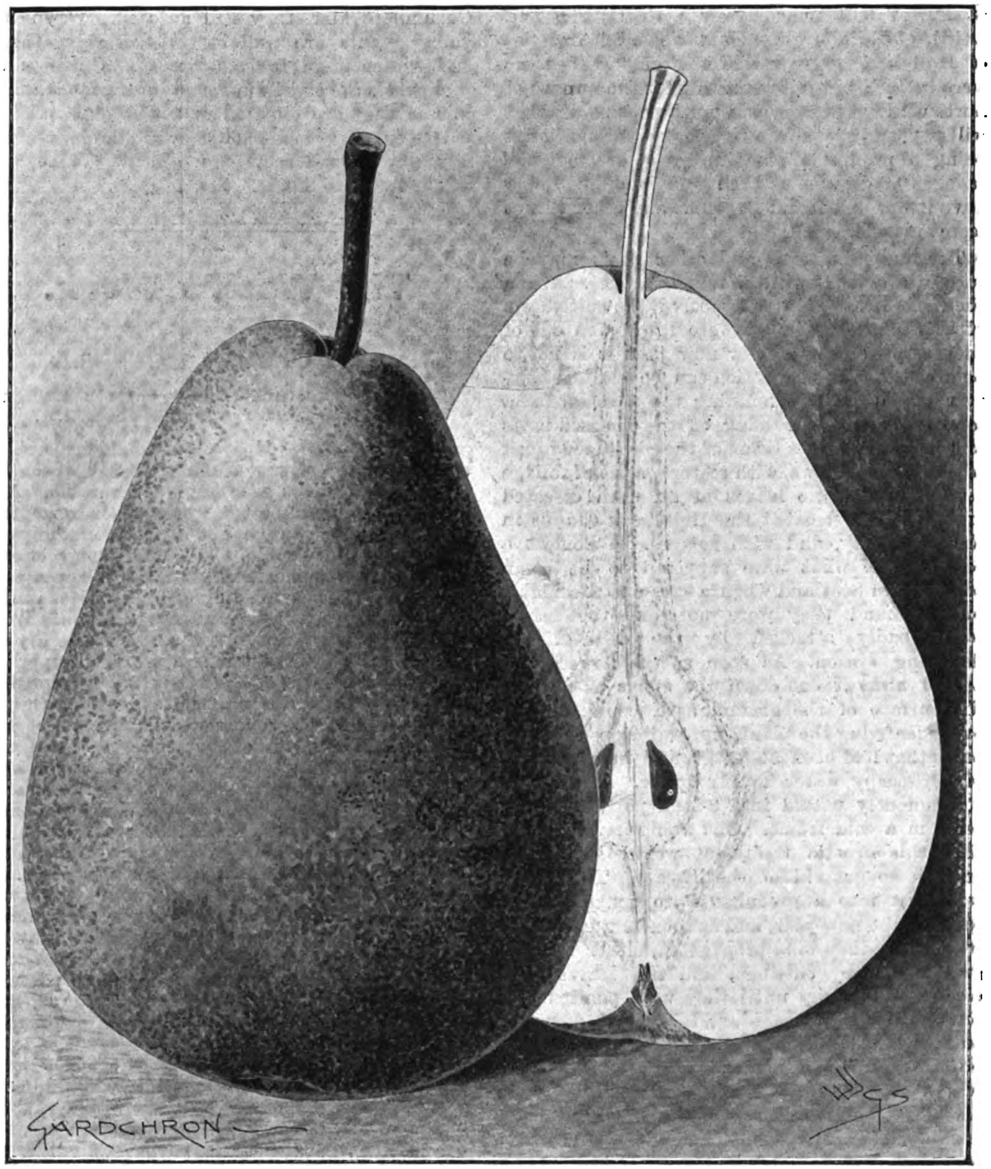


FIG. 13.—PEAR "SANTA CLAUS."

Said to have been introduced from Belgium thirty years ago. Recommended an Award of Merit when shown by Col. Brymer, M.P., at the Royal Horticultural Society's Meeting on January 3.

(See report on p. 16 of our last issue.)

FLORISTS' FLOWERS.

THE HOLLYHOCK.

I WAS pleased to read the remarks of "R. D." on the Hollyhock at p. 415 of the last volume. It is a pity that this noble flower is not cultivated more extensively. Doubtless the fungoid disease alluded to by "R. D." is greatly to blame for this neglect of one of the most noble of autumnal hardy garden flowers. It is easily raised from seed, and not only so, but the seedlings are as a rule but little inferior to the varieties from which the seed has been obtained, and some of them superior. I have been an admirer and cultivator of the Hollyhock for more than half a century, and can well remember the seedlings sent to Scotland from the garden of Mr. Charles Baron, of Walden, a worthy shoemaker and keen florist. The Hollyhock was his favourite flower, and the varieties produced flowers of small size, but up to the florists' standard of a high, perfect centre, although lacking in guard petal. Later, about 1854-5, a very fine set of seedlings was sent out from Paul's nurseries, Cheshunt. I well remember how impatient we were to watch the unfolding of the blossoms; no such flowers had been previously seen in Scotland. The finest of them were Beauty of Cheshunt (rosy-red), Glory of Cheshunt (yellow), Lizzy (peach colour), White Globe (the best white variety up to that time), &c. Probably the raising and culture of Roses was more attractive to the Cheshunt firm, and the stately Hollyhock was relegated to the background. At this time there was quite a different type of Hollyhock grown in Scotland, though the raisers of them were not much known; but I well remember seeing both the types grown in Lord Rosslyn's garden at Dysart, in Fifeshire, under the care of the late Mr. John Laing. This excellent cultivator and good florist conceived the idea of crossing the two sections, the English type of medium size with a high centre and scarcely any guard petal worth mentioning, and the Scotch with large flowers, as much across as a tea-saucer, and with a small centre, the guard petals an inch wide all round. It was a great treat to me to visit this garden, and to see Mr. Laing at work amongst his flowers; everything in the garden was well grown, but he surpassed everybody in Hollyhocks and Chrysanthemums. Unfortunately he gave up his work at Dysart, and started a nursery at Forest Hill in company with Downie and Laird, of Edinburgh. Many splendid varieties of Hollyhocks were raised at Forest Hill—none were better; but unfortunately for the science of horticulture a nurseryman must grow plants that will pay, and probably owing to the Hollyhock not being a profitable plant to grow, or from the ravages of disease, or both combined, Mr. Laing gave it up, and found Begonias and other things more suitable.

The fungoid disease and other pests may be successfully dealt with if taken in time. When the Carnation-rust first appeared, the cultivators of this charming flower were frightened out of their senses; but we know now that it is not to be dreaded. Any collection can be cleaned however bad it is by examining the plants once a week and carefully cutting off the diseased parts and burning them. Some of the plants may look frightful scarecrows, with scarcely a bit of foliage left, but better no leaves at all than diseased ones. I have treated the Hollyhock fungus in the same way, and with success. I bought a collection of what were supposed to be clean plants from Scotland when I came to Bookham, but I found they were not, and the leaves were badly attacked by the end of the flowering season. As soon as the flowers had passed away I cut down the stems as near to the surface of the ground as I could, cut off every leaf, dug the plants up, and dipped all the parts that had been above ground in a solution of soft-soapy water and sulphur. They were subsequently potted into 8-inch pots, and wintered in a cold frame. One would have thought that this drastic treatment would have been enough to get rid of the disease. The plants were put into a greenhouse to make growth early in the new year, and as soon as the growths were ready they were propagated, either by root-grafting or by cuttings, and the leaves were clean and healthy until they were planted out, but the disease appeared, and I kept it down by cutting off the diseased leaves. It was of no use however, for within a short distance of my plants was a row of single varieties smothered with disease. Here was my trouble. I could have conquered the fungus, but I had no power to interfere with other people's gardens. If this or any other very infectious disease in plants is to be stamped out, it must be done on the same principle as hydrophobia was stamped out by muzzling the dogs, or as swine fever or the murrain in cattle is stamped out. There are no diseased Carnations near me, and I can easily keep my plants clean, and just as readily may the Hollyhock disease be stamped out in a country garden outside an infected zone.

Red-spider is troublesome in some gardens, but it can easily be destroyed by syringing in the morning or at night in hot weather.

Propagation by seed is the easiest and a very satisfactory way to grow Hollyhocks. The seed should be sown in May; if it is sown earlier the plants are likely to make an attempt to flower in the autumn of the same year, and this is not desirable. Old plants of the best-named varieties are not hardy enough to stand some of our winters, but unflowered seedlings seldom suffer. They can be planted where they are to flower in July or August at least a yard apart. They need rich well-manured soil, and a mulching of decayed manure on the surface is very desirable.

The flowering of named varieties may be prolonged by propagating plants from eyes which can be obtained from the lateral growths during summer; these growths have generally more flower-buds than leaf-buds, but a few of the latter will be found at the base of the growths. These can be cut out, and planted in small flower-pots; and if treated similarly to Vine-eyes, each one of them planted separately, and plunged in very gentle bottom-heat, or in a spent Cucumber-frame, they will succeed. When the young plants are well established repot them, and winter them in cold frames. Cuttings or root-grafts are struck in spring in a propagating-house; they are plunged in bottom-heat, and if potted in fairly moist soil they should not receive any water until roots are formed. These will be the latest to flower. *Jas. Douglas.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Orchids Resting.—Most pseudo-bulbous Orchids are in a state of rest during winter, when the climatic conditions are most unfavourable. Absence of light cannot be altogether remedied, but the glass can be kept clean to admit as much as is available. The enervating effects of the use of much fire-heat should be compensated by judicious damping of the surfaces in the house and by ventilation, always refraining from employing more fire-heat than is necessary to maintain the desired temperature. The application of water to the roots of the plants is probably the most difficult duty to fulfil, as so many things have to be considered, including the size of the receptacle, the nature of the potting material, the habit of plant, and the weather at the present time and in the immediate future. Deciduous Orchids will naturally need water less often than those having leaves, but in neither should an unnatural degree of shrivelling be permitted, and the time to give water in sufficient quantity and no more is just when the older pseudo-bulbs approach the shrivelled state. On no account should pseudo-bulbs made in the two previous seasons be allowed to shrivel, or the tips of the leaves may suffer. The above remarks apply more particularly to Cattleyas, Lælias, Lælio-Cattleyas, and Dendrobiums. In the case of Odontoglossums, Oncidiums, Vandas, &c., one's judgment has to be guided more by intuition than by ocular observance. If such plants as Vandas are kept too long without water loss of the lower leaves will follow, and again, if kept equally long in a wet state, the disease known as "spot" may attack and disfigure them. A few days or even a week's drought will not affect large plants, but small plants having less potting material at their base may not remain absolutely dry for so long a time, and the giving of water to these is attended with less risk, as they sooner become dry again. A fine day should always be taken advantage of to examine each plant and supply water or not as may be judged to be desirable. During unfavourable weather afford water in small quantities only to those that are on the verge of suffering from drought. Except in the case of some Cypripediums, it is best not to wet any of the leaves, because it might lodge in the sheathing-bracts and cause injury. All water used for applying to the roots of Orchids should be heated to the same temperature as that obtaining in the house. Immersion of the receptacles to the surface of the potting material should not be practised during winter.

Miscellaneous. — During foggy weather less damping should be done so that the atmosphere inside may become comparatively dry. The temperature should be well below the maximum though when the outside atmosphere is fairly mild, the set standard may be maintained. During frosty weather, or when cold winds prevail, some kind of covering should be employed on those roofs easy of access, with the double purpose of conserving heat and preventing the formation of ice on the inside, for this would afterwards melt and cause "drip" on the plants beneath. Flower-spikes will now be appearing on many Odontoglossums, so that means of capturing any slugs or snails present should be adopted. Nothing is so efficacious as seeking for them at night by the aid of a lamp when the weather is moist.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant, Oxon.

Mulching. — Generally speaking, all newly planted trees should be mulched with long strawy litter. This is the more necessary in cold districts, so that the young roots which start growth in the spring and are very tender may not be killed by severe frost.

Pruning Fruit-trees.—Complete the pruning of fruit-trees as early as possible, excepting Peach-trees and newly-planted trees of any variety. When pruning, try to secure an equal balance of top growth and root-action. Cut out all useless shoots, so that one shoot when in foliage will not injure its neighbour by overcrowding. It must be borne in mind that all stone fruits dislike the use of the knife, especially the Apricot. Many growers treat Apricot-trees too generously, plant them in too rich a soil, thereby causing them to make strong soft growth; subsequently these growths are pruned hard back, and "gumming" is the result, or worse still a branch dies, and finally the tree also. Plenty of broken bricks, mortar rubble, and old plaster should be incorporated with the soil when planting Apricot trees, and they will then be likely to produce firm, short-jointed wood. It is best to prune Apricots in the autumn directly the leaves turn colour or fall; then the cuts will partially heal over before the sap descends. If the shoots were pinched back in summer to the fifth leaf they can now be shortened back, leaving two or three buds, and the extending shoots, which have still some amount of wall space to cover, should have one-third of their length removed. In the case of old trees whose spurs have become of some considerable length, and whose flowers do not have the same amount of protection as those near to the wall, they should be shortened back where possible to a growing shoot, failing this, a dormant bud, which will eventually furnish a growth. This rejuvenation of the spurs should be done gradually, employing a period of two or more years for each tree. Apricots may be grown successfully on low walls, training-in each season new shoots, and removing a corresponding number, but always avoiding overcrowding. The foregoing remarks apply equally well to Plum, Sweet Cherry, and Pear-trees trained in the shape of fans. Where young fan-trained trees are making strong growths 3 to 4 feet in length, it is imperative that these should be shortened by one half, always selecting a well-placed bud at the end of each shoot. A portion of the resulting shoots will be required for extending and furnishing the wall. In the case of trees with horizontal branches prune back the leading shoot to 12 inches, leaving a good growth bud at the top and one on either side for furnishing the next pair of branches. The leading shoots on other parts of the tree should not be pruned very severely, the object being to obtain fruit-spurs from the dormant buds rather than new growths. In all cases remove the fruit-trees entirely from the walls, destroying all the old shreds and ties. Where there is any evidence of scale or other insect-pests, wash the trees with Gishurst compound, using a partially worn painter's brush. Any holes in the brickwork where insects may hibernate should be stopped with cement. All walls should be wired where practicable; the initial cost is but small compared with the labour saved in tying and cleansing the trees, besides which leaf, branch, and fruit get a freer circulation of air round them. Where buttresses make it somewhat awkward to wire walls, instead of straining wires over these, cut out joints between the bricks by means of an old rough saw, to allow the wires a free course, afterwards "pointing" the buttresses with cement.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Seakale.—The crowns should now be lifted and stored in the open ground with each crown standing in a perpendicular position, and covered with soil to their full depth, adding any light material as a protection over the whole. The thongs should be cut in lengths of 5 inches, with the cut at the lower end slanting, tied in bundles of 50, and plunged in the soil to keep them from shrinking. We grow this vegetable on the same ground with success for a number of years, but deep cultivation must be practised. Rich manure is seldom required and salt I do not use or recommend, Crowns of moderate size produce the best flavoured Seakale. To keep up a constant supply place the necessary number of crowns in heat every ten days. Put them in any place of darkness containing a flow-and-return hot water-pipe, and cover the crowns standing perpendicularly with screened leaf-soil to the depth of 4, 5 or 6 inches, whichever length should be preferred. Keep the material damp, and as soon as the tips of the Kale appear above the soil cut them with about 1 inch of the old crown attached.

French Beans.—Veitch's Early Favourite is a suitable variety for sowing at this season. The seeds should be sown in pots 7 inches in diameter, using plenty of drainage material and a soil composed of light loam, mixing with it a little dry stable manure. The seed should be planted about an inch deep. Only sufficient space need be left in the pot for watering purposes. This plan is preferable to the practice of adding new soil to the plants as growth develops. The soil when sowing should be in a moist condition so that water will not be needed until the seedlings appear. In establishments where sufficient space can be provided the climbing varieties of French Beans give very satisfactory returns if cultivated in boxes. A temperature of 55° to 60° is sufficient.

Hot Beds.—Attention must now be directed to the formation of new and the re-lining, as the material settles down, of previously formed hot-beds, upon which further remarks will be made next week.

Horse-radish should be planted in a deep, rich, and well-drained soil that was well manured and trenched 2 feet in depth last season. The cuttings (12 inches in length) should be planted in rows 2 feet apart, allowing 1 foot between the plants in the row. Remove all the side rootlets and eyes from the cuttings, and plant them in a slanting position, using a crowbar with which to make the holes; this reduces the tendency of the roots to branch. Another system is to use single crown-buds with 2 or 3 inches of the stem attached. These may be dropped in holes 1 foot in depth made with the crowbar.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Figs require much water at the roots and moisture in the atmosphere, as they are subject to attacks from red spider, and attention to this detail is a dominating factor in the work of successfully forcing them into fruit. It may not be absolutely necessary when the earliest trees are grown in pots to plunge them in a steady bottom-heat of 75° to 80°, but where this can be given them so much the better, for under such conditions the atmospheric moisture can be more easily maintained when the weather prevents the syringe being freely used. The work of damping and syringing must not, however, be neglected, and the roots must be kept in a moist condition by applications of weak liquid-manure applied at a temperature of 80°. Trees started in November may now be afforded a night temperature of 60°, and by day with sun-heat this may be increased to 75°, but a little air may be admitted in favourable weather when the temperature in the house has risen to 70°. Introduce later pot plants to warmth, or close houses containing trained trees, and afford them a night temperature of 50° to 55°. Have all the woodwork and glass in later houses cleaned; afford top-dressings to the trees, and make all ready for starting, but do not re-pot any of the trees at this season, rather give rich top-dressings of good loam, mortar rubble, wood-ashes, and bone-meal, the compost being made very firm.

Fruiting Pines.—Get the Pine stove in readiness for the earliest plants of the Queen variety by thoroughly cleansing the woodwork and white-washing the walls. An early start must be made in order to obtain ripe fruits in May and June. Put fresh leaves or tan into the pit, and allow it to settle down before plunging the pots into this material. The bottom-heat should range from 85° to 90°, and when it has fallen to 90° the pots may safely be plunged. Some judgment is necessary in selecting the plants for forcing. Choose those having the thickest stems and a number of small leaves in the centre, as these are generally most likely to show fruit before making fresh growth. Remove a few of the lower leaves from the stems and any loose soil from the roots, then afford the plants a top-dressing with rough fibrous loam, with a little bone-meal and soot added, firmly ramming this round the collars of the plants. Plunge the pots 2 feet apart, and if the bottom-heat is under control and not allowed to exceed 90° the pots may be plunged to the rims and the material pressed closely round, but if the heat is likely to rise much higher the pots must be plunged loosely until the heat becomes less. The plants having been rested, and the roots kept dry for a time, a thorough application of clear water must be given at a temperature of 80°. Cover up the pits at night in order to economise fire-heat and preserve moisture. A temperature of 65° at night, and 80° by day with sun-heat, with a little air for a short time at 75°, will be sufficient to commence with. Keep the evaporating-pans on the hot-water-pipes filled with water, and provide additional atmospheric moisture by occasionally damping the paths and all available spaces in the houses.

Plants for Succession will require to be kept for some time yet in a bottom-heat of 70° to 75°, and an atmospheric temperature at night of 58° to 60°. Do not allow the plants to become dry at the roots, and exercise special care in respect to those that are plunged near to the hot-water-pipes, as these are more likely to suffer from drought.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Herbaceous Border.—In choosing the position for making a border of herbaceous plants, several conditions must be given consideration. There must be a good background, some shelter from prevailing winds, but nothing that will shade the plants from the sun, or big trees whose roots would rob the soil of its richness. It should not be too near to the residence, but be used as a connecting link between the useful and ornamental departments, or in front of a shrubbery having a serpentine foreground. Such a border loses half its charms if planned with mathematical precision. Having settled the situation and the width of the border, which may vary from 3 to 8 yards or so, commence to trench the ground at one end, working into the staple soil quantities of manure, leaf-soil, loam, old potting-soil, and vegetable refuse, making when finished a border 2 to 3 feet deep. This will deplete the store of compost, but the gardener must console himself with the old adage that "it is not lost what a friend gets." I strongly advise having a border for producing effect in spring and early summer, and another for effect in late summer and autumn. Many bulbs and strong-growing perennial flowering plants being more suited for the wild garden may be omitted when planting these borders. For a border intended to be at its best in the latter part of July and onwards, it is advisable to employ the choicest plants only. Avoid planting one variety at recurring intervals, but have prominent specimens standing out, then bays of pleasing combinations of foliage and colour, irregular shaped masses of one kind dovetailed into another. Let there be no overcrowding, but a circumspectness that can only be obtained by a knowledge of the plants, and practice. The background can be made to add lustre to the flowering plants by planting in it trees of distinct and effective colours, such as Pinus koraiensis, Cupressus Triumph of Boskoop, C. Lawsoniana var. Allumi, Salix regalis, Prunus Pissardi, Populus aurea, Yews, Hollies, &c.

Rosary.—Prune and tie in hardy Roses on bowers, pillars, and pergolas. These are generally of the Ayrshire Rambler and Wichuriana types. Cut out all stunted and weak growths, and tie in the remaining growths 6 ins. apart. This pruning will cause the bowers to have a naked appearance, but the plants will flower more profusely for it in summer. Amongst the best of the rambling, trailing, and climbing varieties are Turner's Crimson Rambler, Dorothy Perkins, Auguste, and Alberic Barbier, François Foucard, René Andry, one of the very best, and Elisa Robichon. Protect tender varieties with bracken and Fir branches.

Propagating Department.— Peruse the seed catalogues, and send your order early. Obtain stocks of pots and sundries. Prepare the propagating-house by getting ready a good hot-bed in addition to the hot-water-pipes. Induce stock plants of Heliotrope, Tropæolum, Lobelia erinus vars., Ageratum, Verbenas, and Agathæa cœlestis to make growth. Sow seeds of Begonias in pans, covering them with a sheet of glass till germination has taken place.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Conservatory or Coolhouse, with Flowering Plants.—Keep this structure as bright and gay as possible. The recent fog has had a bad effect on many plants that would otherwise have done service for a considerable time. Defects must be made good. Admit air carefully, but lose no opportunity of doing so on all favourable occasions. See that the creepers on the building are tied neatly together, and let tidiness generally be a feature.

Plants for Early Forcing that were potted and plunged in ashes some time ago will on being placed in heat commence to grow readily. Amongst the most useful are Spiræa Thunbergii and S. confusa, Staphylea colchica, Lilac Charles X., Madame Lemoine, and Viburnum plicatum. Azaleas, whose buds are plump and prominent, may be put in the forcing-house, and be syringed frequently. Batches of the earliest Tulips and Narcissus should from time to time be placed in heat to produce a succession of flowers according to requirements.

Hippeastrums (*Amaryllis*).—Flowering bulbs that were well ripened and have rested should be examined, and any that are showing their flower-sheaths should be turned out of their pots, the soil carefully removed from the bulbs, and the bulbs repotted. A compost consisting of three parts good turfy loam, one part of decayed leaf-soil, one part of broken lime-rubble, and a 6-inch potful of Thomson's "Plant Manure" to each barrowload of the compost, together with sufficient silver sand to keep the whole porous, will be suitable. The plants should be placed in a stove temperature if early flowers are wanted; they may be syringed lightly, but not watered until root action has commenced. Seeds also may now be sown thinly in pans or pots, and lightly covered with finely sifted potting soil. If the soil is watered before the seeds are sown, no more water should be required until the seeds have germinated. Place a sheet of glass over the pots to prevent drip or insects from disturbing them, and plunge the pots to the rim in a mild bottom-heat.

Gloxinias.—For an early batch a few of the corms which show signs of activity may be repotted. Reduce the old ball of soil by means of a sharp pointed stick, and put them into pots according to the size of the corms, using a compost of turfy peat and loam in equal proportions, with a little silver-sand. The soil should be moderately moist when used, and no water will then be required until a good start into growth has been made. Syringe the plants overhead in favourable weather.

Cinerarias, Primulas, &c.—Remove any decayed foliage on plants in cold frames, and allow a circulation of air to pass between them on all favourable occasions.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	JAN. 16	British Gardeners' Association Meeting at Cardiff. Birmingham and Mid. Counties Gardeners' Mutual Improvement Association Annual Meeting.
WEDNESDAY,	JAN. 18	Brixton. Streatham and Clapham Hort. Soc. Ann. Meeting
THURSDAY,	JAN. 19	Linnean Soc. Meet. Gard. Roy. Ben. Inst. Ann. Meet. and Elect. of Pensioners at Covent Garden Hotel, at 3 P.M.; Ann. Friendly Supper at 6 P.M.

SALES FOR THE WEEK.

MONDAY, JANUARY 16—
Hardy Border Plants, Gladiolus, Spiræas, &c., at 67 and 68, Cheapside, by Protheroe & Morris, at 12.
WEDNESDAY, JANUARY 18—
Azaleas, Aspidistras, &c., from Belgium; Roses, Carnations, &c., at Protheroe & Morris' rooms, at 12.
FRIDAY, JANUARY 20—
Greenhouse Plants, Iris, Hollyhocks, &c., at 67 and 68 Cheapside, E.C., at 12 o'Clock, by Protheroe & Morris.—Great sale of Orchids, by order of Messrs. Sander & Sons, at Protheroe & Morris's Rooms, at 12.30.

For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —36·9°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 11 (6 P.M.): Max. 49°; Min. 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday. Jan.* 12 (10 A.M.): Bar., 30·1: Temp., 44°. Weather—moderate degree of sunshine.
PROVINCES.—*Wednesday, Jan.* 11 (6 P.M.): Max. 48°, Dover; Min. 44°, North of Ireland.

The Importance of Spraying. THE value of spraying as a means of checking fungous and insect pests on crops is now widely acknowledged, and the Cornell University (Ithaca, N.Y.) has lately published Bulletins dealing with the subject, The following general directions are as applicable in our orchards and gardens as they are in America:—

"It should be remembered that in all cases success is dependent on the exercise of proper judgment in making applications. Prevention in the case of fungous diseases should be the watchword. Plant diseases are rarely cured, but they can frequently be prevented. Know the enemy to be destroyed, know the remedies that are most effective, and apply at the proper season. Be prompt, thorough, and persistent. Knowledge and good judgment are more necessary to success than any definite rules.

Spraying is an insurance. Spraying is no longer an experiment. It is an accepted practice, as tillage, pruning, and fertilizing are. It may not be necessary to spray every year, but the farmer should be prepared to spray every year. In case of doubt spray. See that pumps and rigs are in working order before ploughing time comes. Order your materials. 'Be ready.'

There is no one best pump or nozzle. There are best devices for particular kinds of work, depending on the size of the plants to be sprayed, the kind of spray to be used, the extent of the operations. Get a good pump, one that works easily and smoothly, and is strong enough to make a fine spray when two lines of hose and four nozzles are used, if it is designed for field work; it is economy in the end. Look over the horticultural papers for advertisements of spraying outfits, and write for circulars. Power pumps are becoming more popular each year."

As regards spraying for wild Mustard (Charlock), Mr. J. L. STONE remarks that:—

"Wild Mustard growing with Cereals or Peas can be destroyed with a solution of copper sulphate, without injury to the crop. A 3-per-cent. solution (about 10 lb. to the barrel, or 40 gallons of water), at the rate of 40 to 50 gallons per acre, gives very satisfactory results."

Mr. JOHN CRAIG contributes to the Bulletins information concerning dust or dry powder sprays, and remarks that:—

"The labour and expense of applying dust sprays appear to be less than for sprays in liquid form. Six applications of dust spray were practically not more effective on Apples than two applications of Bordeaux-mixture, nor did they cost more. Dust or powder sprays should be applied in the early morning or late afternoon. Damp, not wet, conditions of atmosphere and of the tree are desirable, if not essential. The powder must be strictly dry. Thoroughness of application is as necessary as with Bordeaux-mixture. Finally, it does not seem that, at the present time, there is any good reason why an orchardist who has reasonably level ground and available water supply, and who is equipped with pumps for the application of liquid spray, should discard these, or even introduce the dry spray method. Under special conditions it certainly has advantages, but the conditions demanding the employment of dry sprays are usually lacking in the fruit districts of New York."

MR. CHAMBERLAIN'S GARDEN (see Supplementary Illustration).—In our issues for November 26 and December 3, 1904, we published several very interesting views of Mr. CHAMBERLAIN'S garden at Highbury, near Birmingham. As a Supplement to this present issue a further picture is given from the same garden, illustrating the new part of the pleasure-grounds, which has been planted with an exceedingly choice collection of trees and shrubs. It will be seen that the planting has been done in a very informal manner, but each species has been given a position either of isolation or of association with others as was best suited to its characteristics. The surface of the ground throughout this part of the garden is covered with grass, which is mown occasionally with scythes; and winding, grass-covered paths, kept closely mown with machines, serve to guide one through the miscellaneous assortment of beds and isolated specimens of trees and shrubs. The effect is good, and upon a cursory glance at the picture we might imagine the view to be one in the Royal Gardens at Kew.

EUCALYPTUS.—The fifth part of Mr. MAIDEN'S *Critical Revision* contains descriptions and illustrations of E. stellulata, E. coriacea and E. coccifera, the latter a Tasmanian species, which has proved hardy in some parts of southern England.

LINNEAN SOCIETY.—The next general meeting of the Society will be held on Thursday, January 19, 1905, at 8 P.M. Exhibition: Rev. T. R. R. STEBBING, M.A., F.R.S., Sec.L.S.—Specimens of notable and little-known Crustaceans, chiefly exotic. Discourse: Dr. A. HENRY, F.L.S. —Botanical collecting. Paper: Dr. W. G. RIDEWOOD, F.L.S.—"On the Cranial Osteology of the Families Osteoglossidæ, Pantodontidæ, and Phractolæmidæ."

"KEW GUILD JOURNAL."—We are requested to state that in compliance with numerous requests by those interested in Kew and Kewites, a few copies of the Journal are this year available for purchase by non-members of the Guild. Applications for copies should be made to the Secretary (W. N. WINN), Royal Botanic Gardens, Kew. Price 1*s.* per copy; by post, 1*s.* 2*d.*

THE HOLLAND HOUSE SHOW.—We greatly regret to hear, from an official source, that there will be no exhibition of the Royal Horticultural Society in Holland Park in the ensuing summer.

PHYLLOXERA.—M. G. CANTIN reports to the Academy of Sciences, Paris, that lysol is destructive to the winter egg of the Phylloxera. The cuttings of the Vine were steeped before planting in a one-per-cent. solution of lysol. In spring, before the pruning is done, the Vine is sprayed with lysolated water at the strength of 4 per cent.

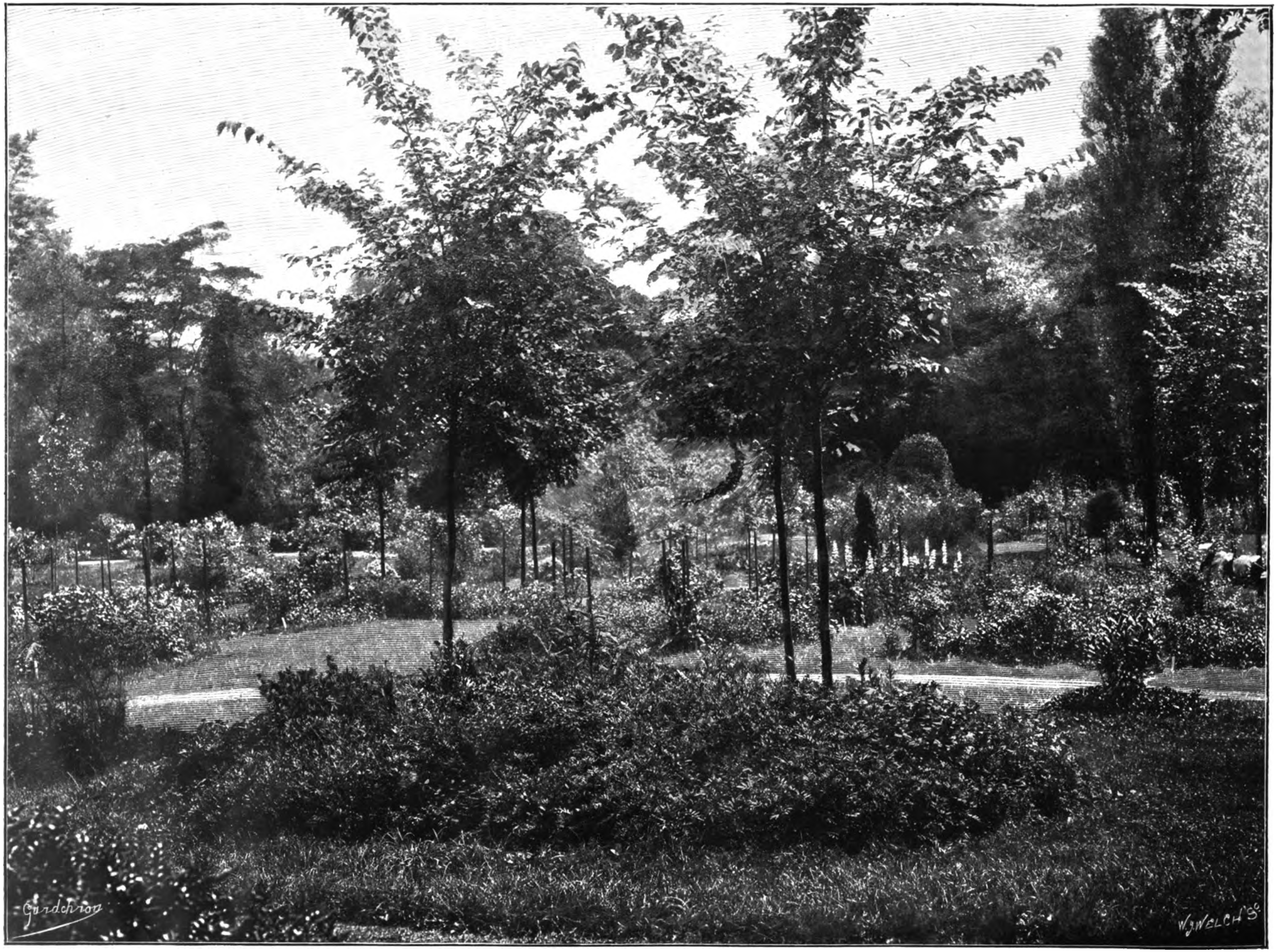
"THE ANTIQUARY."—For twenty-five years this magazine has faithfully chronicled the progress of archæological research, and has critically reviewed the antiquarian work of the time. With the present year the *Antiquary* appears in slightly different guise, the first number of a new series being in a newly designed cover, and containing an additional sheet of eight pages. We hope our contemporary will still continue to increase in popularity, of which this commencement gives good promise. It is published by ELLIOT STOCK, Paternoster Row.

VILMORIN MEMORIAL. — The total amount received now amounts to 30,439fr. (=£1,217+), contributed by 2,710 subscribers. Mr. HARRY VEITCH has forwarded £5, which will be included in the next list. A large proportion of the subscribers hail from the United States.

WOBURN FRUIT FARM.—The fourth report of the proceedings at the Duke of BEDFORD'S fruit farm at Ridgmont, near Woburn, has been published by EYRE & SPOTTISWOODE. It deals with the physical and chemical characters of the soil and then records the results of the manurial experiments on Strawberries, Gooseberries, Currants, Raspberries and Apples. It is very curious to note that whilst in other crops manure, whether natural or artificial, produced an increase, no such increase is observable in the case of Apples. In a future issue we hope to reproduce some portion of this interesting report, the results in which show more conclusively than ever the necessity for the grower to undertake experiments on his own soil during a period of several years. The experiments need not be either extensive or elaborate, but the results would be more valuable in practice than any obtained elsewhere under different conditions.

NICOTIANA SANDERÆ.—This hybrid between N. affinis and N. Forgetiana has conquered the horticultural world. It has been figured in our own columns, in *Flora and Sylva,* in the last issue of *The Garden,* and in the *Revue Horticole,* and we know not what other periodicals. From what we saw of it on a large scale at Bruges last autumn we are decidedly of opinion that its reputation is not greater than its merits demand. There are many colour variations not yet in commerce. It is a half-hardy annual, which may be treated like the China Aster.

LOUIS LUBBERS.—We regret to have to announce the death of this gentleman, who was known to many of our readers as the former Curator of the Brussels Botanic Garden, and a regular attendant at the principal horticultural meetings in Belgium. M. LUBBERS was in the seventy-third year of his age, and had been the recipient of many honours.



HIGHBURY. BIRMINGHAM, THE RESIDENCE OF THE RT. HON. JOSEPH CHAMBERLAIN, M.P., SHOWING A PORTION OF THE NEW GROUNDS RECENTLY PLANTED WITH A COLLECTION OF FLOWERING TREES AND SHRUBS AND OTHER SPECIES OF PLANTS.

MANCHESTER BOTANICAL GARDENS.—The following is an extract from the *Manchester Evening News* for January 5:—"A deputation headed by Mr. JOHN BOWDEN, Treasurer of the Royal Botanical and Horticultural Society of Manchester, and Mr. Alderman GIBSON, waited upon the Lord Mayor of Manchester to-day with an offer to hand over the Botanical Gardens at Old Trafford to the city on the understanding that the obligations at present incurred by the management would be met. The LORD MAYOR while viewing the proposal with favour, was not, of course, in a position to make a definite reply but he promised that he would report to the proper quarter. He thought the Council would be pleased to secure at a nominal price an open space of such great value and beauty. The alternative, he understood, was that the estate would go into the hands of the builders, as, owing to the changed condition of the neighbourhood, it was no longer possible to maintain the gardens without financial loss. Time was when the Botanical Gardens at Old Trafford were among the most popular, as they were in many respects the most beautiful of the resorts of Manchester, Lancashire, and Cheshire people. An older generation will remember the crowds that were in the habit of flocking to the famous flower shows that were held from time to time. No more charming gatherings were held throughout the year. Their fame spread throughout the North of England. Then the famous Jubilee Exhibition was built round the gardens, of which the gardens themselves were the gem, the haunt every day in the week and every evening of thousands of delighted citizens. For many years it has been apparent that the gardens, on their old basis, could not be continued. Money was lost every year, largely owing to the changes in the Old Trafford district from the residential point of view. Not long ago there was a feeling that the Stretford Urban District Council should acquire the gardens, but a poll of the ratepayers being taken on the question, the majority voted against the project. The gardens, it will be remembered, are a mile beyond the city boundary.

GRAFTING CHRYSANTHEMUMS.—In the *Revue Horticole* M. GASTON CLEMENT recommends that notch-grafting should be practised on Chrysanthemum frutescens, especially the varieties known as Countess of Chambord and Golden Star (Étoile d'Or). The most favourable season for the operation is from February to April. The grafted stocks are kept in a propagating-frame for about three weeks, and then gradually hardened-off.

A FAMOUS CAMELLIA TREE.—The famous Camellia tree, well known to tourists, in the hot-house of the English garden of Pillnitz Castle, near Dresden, is reported to have been seriously damaged by fire. The tree is 27 feet high, 300 years old, and was originally brought from Japan. It was presented by the Empress ANNE of Russia to the Elector FREDERICK AUGUSTUS II. in 1739.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We would remind our readers that the sixty-sixth Annual General Meeting of the members and subscribers of this Institution will be held at the Covent Garden Hotel, Southampton Street, Strand, London, W.C. (adjoining Covent Garden Market), on Thursday, January 19, 1905, at 3 P.M., for the purpose of receiving the report of the Committee and the accounts of the Institution (as audited) for the year 1904; electing officers for the year 1905; and for the election of eighteen pensioners on the funds. The chair will be taken by HARRY J. VEITCH, Esq., Treasurer and Chairman of Committee. The poll will open at 3.15 o'clock, and close at 4.30 o'clock precisely, after which hour no voting papers can be received. The annual Friendly Supper will be held at the same place after the Annual Meeting at 6 P.M., when EDWARD SHERWOOD, Esq., will preside.

STOCK-TAKING: 1904.—It will be necessary to give a very brief synopsis of the Trade and Navigation Returns for the month of December, before setting forth in brief review the total record for the year 1904. The imports for December are valued at £52,845,366, which, compared with the same period of 1903 (£52,319,618), shows an increase of £525,748. The exports also show an increase—£28,072,134, as against £24,612,503 for the same period in the preceding year—an increase of £3,459,631. By the way, it may be worth noting here that among the latest arrivals of fruit in December were two consignments of Peaches from the Cape, some sixty packages in all.

We come now to the year's over-sea trade, which figures for the enormous sum of £852,180,021. If this be compared with the figures for 1903 (£833,400,397), an increase of £18,779,624 will be seen. To distinguish: the imports value for last year was £551,362,124; for 1903, £542,600,289—an increase of £8,761,835. As to

EXPORTS,

the figures for last year were £300,817,897; for 1903, £290,800,108—an increase of £10,017,789. The summary section of the Returns has all its wonted value. It is as follows:—

IMPORTS.	1903.	1904.	Difference.
	£	£	£
Articles of food and drink—duty free	114,093,078	112,098,747	—1,994,331
Articles of food & drink—dutiable	114,001,215	115,168,574	+1,167,359
All other Imports...	214,505,996	224,094,803	+9,588,807

Again, the value of the flowers, plants, &c., imported last year was £242,454; this compared with 1903 (£248,689) shows a decrease of £6,235. The following table of fruits and vegetables imported speaks for itself; some of the figures are well worth noting:—

IMPORTS.	1903.	1904.	Difference.
Fruits, raw—	Cwt.	Cwt.	Cwt.
Apples	4,569,546	3,771,781	—797,765
Apricots and Peaches	9,578	13,465	+3,887
Bananas—bunches ...	3,087,516	3,910,511	+822,995
Cherries	110,192	260,830	+150,638
Currants	76,419	117,352	+40,933
Gooseberries	34,312	36,215	+1,903
Grapes	684,084	853,572	+169,488
Lemons...	978,318	989,296	+10.978
Nuts—Almonds ...	157,156	153,015	—4,141
Others used as fruit	791,281	706,065	—85,216
Oranges...	6,176,752	5,853,253	—324,499
Pears	271,518	542,624	+271,106
Plums	594,626	493,984	—100,642
Strawberries	32,644	34,524	+1,880
Unenumerated ...	688,873	654,765	—34,108
Vegetables, raw—			
Onions ... ...bush.	8,619,919	8,291,814	—328,105
Potatos ... ... cwt.	9,150,202	10,003,267	+853,065
Tomatos ... ,,	1,071,927	1,134,697	+62,770
Unenumerated ,,	396,784	457,491	+60,707

The value of the twelve months' imports of dried fruit was £1,849,683; for the preceding year, £2,116,717—a decrease of £267,034.

The value of the timber of all descriptions brought to our ports last year was £15,505,625. Compared with the figures for 1903 (£18,192,519), this shows a decrease of £2,686,894. The denudation of some of the principal timber lands still continues, we believe; and as there are no nurseries the result may easily be foretold. A few words as to

EXPORTS.

The total for the year is placed at £300,817,897; for 1903, £290,800,108—an increase of £10,017,789. There is nothing to be gained by endeavouring to account for this or that rise or fall—the figures must stand for themselves.

NATIONAL POTATO SOCIETY.—Arrangements are not concluded, but it is probable that the exhibition will be held on November 22 and 23 at the Royal Horticultural Hall, Vincent Square.

"PIGS FOR PROFIT."—This is No. 10 of *The Profitable Farm and Garden* Handbooks (148 & 149, Aldersgate Street, E.C.), and should be consulted by everyone who keeps pigs or who proposes to do so. The instructions are plainly and simply written and the illustrations of samples of some of the best breeds give additional value. So useful an animal is the pig to large and small farmers that the least they can do is to learn how to keep the creature clean and comfortable.

THE BRITISH GARDENERS' ASSOCIATION.—We are informed that a meeting to consider the advisability of forming a local branch of the Association was held in the Co-operative Hall, Ipswich, on Wednesday, January 4, Mr. J MORGAN, of the well-known firm of THOMPSON & MORGAN, presiding over a large and representative gathering of local gardeners. In the course of his address, Mr. W. E. CLOSE, a member of the Committee of Selection and a former resident in Ipswich, dwelt particularly upon the benefits which would result to employers from the establishment of a reliable source for the supply of thoroughly competent and trustworthy gardeners. He strongly urged the establishment of a local branch, and asked all those who cared for the uplifting of their profession to at once become members. After a well-maintained discussion a resolution approving the programme of the Association and the formation of a local branch was carried unanimously. Mr. E. G. CREEK, of Westerfield House Gardens, Ipswich, agreed to undertake the duties of local secretary. There was a British Gardeners' Association meeting at Reigate on January 10, and others will take place at Swansea, on Friday, 13th; at Cardiff, in the Town Hall, on Monday, 16th; at Birmingham, on February 13; in the Isle of Wight on a date to be arranged, and at other places.

OUR CONTEMPORARIES.—The New Year's number of the "GARDENERS' MAGAZINE" is a special number, containing numerous illustrations, and a variety of information from grave to gay. Mr. ODELL's article on Gourds should induce gardeners to grow these highly interesting plants. Mr. GORDON's article on the evolution of the Cabbage is very interesting as showing the plastic nature of Brassica oleracea. The Almanac reminds us in its first item that taxes are due—a painful if accurate beginning. Let us hope that the practical directions which our contemporary gives may be the means of supplying a fund from which these painful though necessary requirements may be met.

"THE GARDEN," which now enters the ranks of the penny papers, has a good coloured illustration of Nicotiana Sanderæ, an almanac, and numerous illustrations. Prizes are offered by Mr. GIBBS to young gardeners for answers to certain questions relating to hardy trees and shrubs.

"THE JOURNAL OF HORTICULTURE" opens the New Year with a New Year's message from the veteran, "D. Deal." Amid other matter there is an interesting article on the vineyards near Montreux. The writer does not tell us what number of francs he had to pay as a fine for looking at the Vines. Our own experience is that a fine, of small amount, it is true, is threatened for entering a vineyard, much more for touching a leaf.

"THE GARDENER" is full of practical notes and varied information. We note articles on hardy trees and shrubs which indicate a desire to bring under the notice of the public the great variety, interest, and beauty there is in these subjects. But the public is very capricious, and if the taste does not run in that direction, it is hard indeed to force it. The articles on Grape Culture, by Mr. TAYLOR, are of great interest.

"GARDEN LIFE."—In this periodical, under the head of "Gardening Experiences," is an interesting letter from Captain HANCOCK, in which he records his experience with Solanum Commersoni, which he finds to be immune to disease, and to thrive in an actual swamp.

"AMATEUR GARDENING" has a coloured plate of Cypripedium insigne, and directions for cultivating this popular Orchid. The contents are varied, and serviceable to amateur gardeners.

"THE GARDENING WORLD," now published at 2d., has a supplementary plate of the new Pillar Rose Maharajah. Articles, paper and print are alike good.

"GARDENING ILLUSTRATED" is filled with matter specially interesting to amateurs, and its illustrations in the current number include good representations of Magnolia Lennei, Rose "Sulphurea," and Gladiolus "Mrs. F. Field." The Answers to Correspondents occupy a considerable share of the available space.

APPLES.—So much interest has been excited in our Apple Census (see our volume for 1904) that we are induced to put the results in another form. It will be remembered that the 198 voters were distributed through every part of Great Britain and Ireland. They included not only gardeners, but nurserymen and growers of fruit for market, and therefore the conditions under which the trees are growing are very varied. Each voter naturally recorded his own individual impressions, and took into consideration not only flavour but cropping qualities, liability to canker, and suitability to local conditions and requirements. The total number of varieties mentioned was 89 in the case of kitchen Apples, and 102 in that of sorts grown for dessert. Of these, only the first six in each section were numerically important. There can, therefore, be no question as to the general opinion as to the merits of the twelve Apples mentioned. The others which were enumerated in our columns are evidently very good in some few places, but were a very long way behind the selected twelve in the opinion of the large majority of voters:—

DESSERT APPLES.

COX'S ORANGE	about	82	per cent.
KING OF THE PIPPINS ...	,,	64	,,
WORCESTER PEARMAIN...	,,	51	,,
RIBSTON PIPPIN	,,	47	,,
BLENHEIM PIPPIN ...	,,	35	,,
IRISH PEACH	,,	31	,,

The percentage of votes for all the other varieties was very much smaller.

KITCHEN APPLES.

LANE'S PRINCE ALBERT...	about	59	per cent.
WARNER'S KING	,,	55	,,
LORD SUFFIELD	,,	42	,,
ECKLINVILLE SEEDLING.	,,	41	,,
BRAMLEY'S SEEDLING ...	,,	38	,,
DUMELOW'S SEEDLING ...	,,	31	,,

As in the case of dessert Apples, the percentage of votes for the other varieties mentioned was very much less.

A GARDENERS' CRICKET CLUB.—The annual supper and concert of the Anguloa Cricket Club, which was organised over twenty years ago, and consists entirely of *employés* of Messrs. SANDER & SONS, was held at the Crown Hotel, St. Albans, on Saturday, January 7. During its history many gardeners throughout England have been associated with the club; and the cricket clubs of Kew Gardens and of Messrs. PROTHEROE & MORRIS are its most formidable opponents. The chair was taken by Mr. F. K. SANDER, and a pleasant evening resulted. The Hon. Secretary reported the club's finances as being most satisfactory, and showing a considerable improvement on those of previous years.

THE RAINFALL AT ROTHAMSTED
IN 1904.

ACCORDING to the records from the rain gauge at the Rothamsted Experimental Station, Hertfordshire, constructed fifty-two years ago, and one-thousandth part of an acre in dimension, standing 2 feet above the surface of the ground, and being about 420 feet above sea-level, we find that the total rainfall for the year 1904 amounted to nearly 25 inches. This is 3 inches less than the average record for this district extending over the past fifty years, and 13¾ inches less than fell in the twelve months of the previous year, 1903.

The following table shows the rainfall of each month for the past year at Rothamsted, with the average amount of rainfall for each month of the previous fifty years, and the difference of 1904 above or below the average:—

Rainfall at Rothamsted, Herts, for each month of the year 1904, *the Total for the Year, the Average Rainfall of fifty Years*, 1853-1902, *and* 1904 *above or below the average.*

Months.	Rainfall, 1904.	Average rainfall of fifty years.	1904. Above or below the average.*
	Inches.	Inches.	Inches.
January	3·50	2·35	+ 1·15
February	3·44	1·79	+ 1·65
March...	1·58	1·78	— 0·20
April	1·25	1·86	— 0·61
May	2·15	2·23	— 0·08
June	0·81	2·31	— 1·50
July	2·92	2·55	+ 0·37
August	2·15	2·65	— 0·50
September	1·60	2·50	— 0·90
October	1·37	3·09	— 1·72
November	1·67	2·58	— 0·91
December	2·48	2·31	+ 0·17
Yearly total ...	24·92	28·00	— 3·08

* The sign in the last column (+) signifies above the average, and the sign (—) below the average.

The above figures show that the yearly total of rain, frost, and melted snow, of which latter there was but a very small quantity, in the past year amounts to 24·92 inches, against an average of 28 inches for the previous fifty years, showing a deficiency of a little more than 3 inches. As 1 inch depth of rain represents 101 tons of water on each acre of land, the results show that there is a deficiency of water amounting to 311 tons per acre to our underground water-supply.

Leaving out the months of January and February, we find that the remaining ten months of the past year of 1904 show a deficiency of rainfall amounting to nearly 6 inches, compared with the average of the past fifty years of these same months, which is equivalent to a loss of water on each acre of land in this district of 133,029 gallons. It is seen that the four months of January, February, July, and December have each given an excess of rain compared with the average, while the eight remaining months have each yielded a deficiency.

So much depends in the realisation of the gardener's hopes upon the degree of humidity in the atmosphere, and the amount of moisture contained in the upper layers of the soil, that the rainfall of any particular period is necessarily a matter of much interest to the horticultural community. From the above figures it can be readily seen that 1904 was decidedly dry, and that the month of June gave 1½ inch of rain deficient, which is one-half the total deficiency of the year. An old adage says, "A dripping June puts all things in tune"; the dryness, therefore, of the past month of June may perhaps account for the stagnation which occurred in the growth of several of the outdoor crops at that period—in fact in many districts the crops did not appear to recover their normal growth throughout the season; and the cereal crops, and more especially Wheat, was the worst that had been harvested since the year 1879, although previous to the month of June there was such a capital promise.

Root crops and Potatos also suffered considerably from the deficiency of rainfall during their early growing period.

Owing to the fact that there was a large excess of water in the soil remaining in the lower depths from the previous year's (1903) heavy records, which totalled up to nearly 38¾ inches, being 10 inches in excess of the average yearly fall, the deeply-rooting fruit trees and shrubs did not suffer from the 1904 drought, and the result was an abundant crop of most kinds of fruit. *J. L. Willis, Harpenden.*

BOOK NOTICE.

"THE BOOK OF TOPIARY."

SUCH is the rather awkward title of a little book written by Mr. C. H. Curtis, of the "*Magazine*," and Mr. Gibson, the head gardener at the famous garden at Levens. It forms one of the series of handbooks of practical gardening edited by Mr. Harry Roberts, and is published by Mr. John Lane. It is not quite clear where Mr. Curtis's participation ends—it might, on a first glance, be thought that the three introductory pages, which alone are signed by him, constituted the sum of his work, but such an idea is dissipated by the statement that he had been invited to contribute a historical account of the art of Topiary. In any case the first forty pages or so form a very interesting and readable preface to the practical advice given in later chapters by Mr. Gibson. There is no disputing about matters of taste, and in gardening there is room for the most varied opinions. Where a solitary specimen or a garden of clipped Yews has been handed down to us from our forefathers by all means let us preserve it and them as curiosities and historical documents. In a public garden like that at Versailles or at Kew, for instance, we expect to see examples of all possible styles of gardening, and on this account the clipped Yews and Hollies near the Palm-house at Kew may be tolerated even where admiration is not possible.

But when it comes to private gardens and modern imitations of what is ugly and unnatural we think that while full liberty of using the shears as he pleases should be conceded to every man, those whose duty it is to lead the public taste or to set an example of what is beautiful and true should have equal liberty to express their opinions without being "pitied." The very same writer who made use of the word just quoted, which is repeated on the title-page of this little volume, expresses himself more charitably in another passage quoted on p. 12. "I confess"—it is Mr. Shirley Hibberd who is speaking—"that I should never care to adorn my garden with topiary or with carpet-bedding, but I hope always to be cautious in making declarations in respect of such matters, that I may not appear to despise another man's pleasures or vainly desire to set up a standard of my own in opposition to the delightful variety that is ensured by the free exercise of individual taste and fancy."

It is indisputable that, in spite of the fact that foliage is a very inappropriate medium for the representation of animals, statuary, or architecture, the fancy for these strange productions is at present extending, and no better guide for their management can be had than Mr. Gibson, who has charge of the very remarkable examples at Levens, of which illustrations have been given in our columns. The Yew is the tree that is most often treated in this fashion, but its relatively slow growth constitutes an objection to its use. In some cases the tree lends itself to "artistic" treatment, but those who remember the Yews in Mr. Dixon's wood at Leatherhead will realise how much more interesting the extraordinarily diverse natural forms of the trees in that place are than any that have been artificially manipulated. Still, for those so minded, these particular Yews offer suggestions for artificial treatment which could readily be adopted. Evergreen trees are mostly made use of for this purpose, and Thuya gigantea would lend itself well to these grotesque distortions. Every fruit-grower knows how espalier trees can be made to assume almost any shape that may be desired.

So, too, natural seedlings often occur which the gardener may utilise in this way. We have daily in view a Hawthorn of considerable size which in shape is a perfect umbrella with an unbranched stem and a dome-shaped head. It came up as a seedling, and soon manifested its tendency to grow into an "umbrella-tree," a tendency which has been fostered, though in truth it needs nothing but the removal every spring of a few branchlets, which by their upward tendency would, if not removed, soon spoil the shape of the tree. There is one advantage that the topiary art has, it ensures adequate treatment of the hedges. Whatever may be said in disparagement of the strange devices dear to the topiarist, no one will object to the formation and maintenance in an appropriate position of a good hedge, and the man who can keep a peacock or a giant in good order may be trusted with the management of a Yew or Holly-hedge.

Mr. Gibson's directions and his recommendations as to what should be grown in association with these curiosities are excellent and clearly expressed. So we can thoroughly recommend the little book, not only to those who have to create or manage these topiary gardens for themselves but also to those readers to whom the history of garden fashions and caprices offers attraction, and who read for diversion if not for practical purposes.

CYPRIPEDIUMS.

THE three Cypripediums, of which an illustration is given at fig. 14, were grown in the collection of W. Duckworth, Esq., of Flixton, near Manchester (gr., Mr. H. Tindall), and were exhibited at the meeting of the Manchester and North of England Orchid Society on December 15, 1904, when they were awarded a Gold Medal.

Plant No. 1 to the left is C. × Leeanum giganteum, and bore twenty-one flowers, every flower being perfectly formed, and the leaves rich and vigorous. No. 2 is C. insigne Sanderæ, in the centre, and was very beautiful with twelve fine flowers, the condition of the plant generally being excellent. No. 3, to the right, is possibly the finest specimen of C. insigne Harefield Hall variety extant, possessing fifty or more growths, and occupying a pan 15 or 16 inches in diameter. The number of flowers on this plant was thirteen, and it is possible that next season the plant will carry two dozen flowers.

All orchidists who saw these three plants exhibited agreed that it would be a hard matter to match them for beauty and excellence of cultivation. The owner, Mr. Duckworth, was honestly proud of his productions, one of his ideals being to make every plant in his collection a "specimen." Many converts to "specimen" growing were made on December 15, 1904. *P. W.*

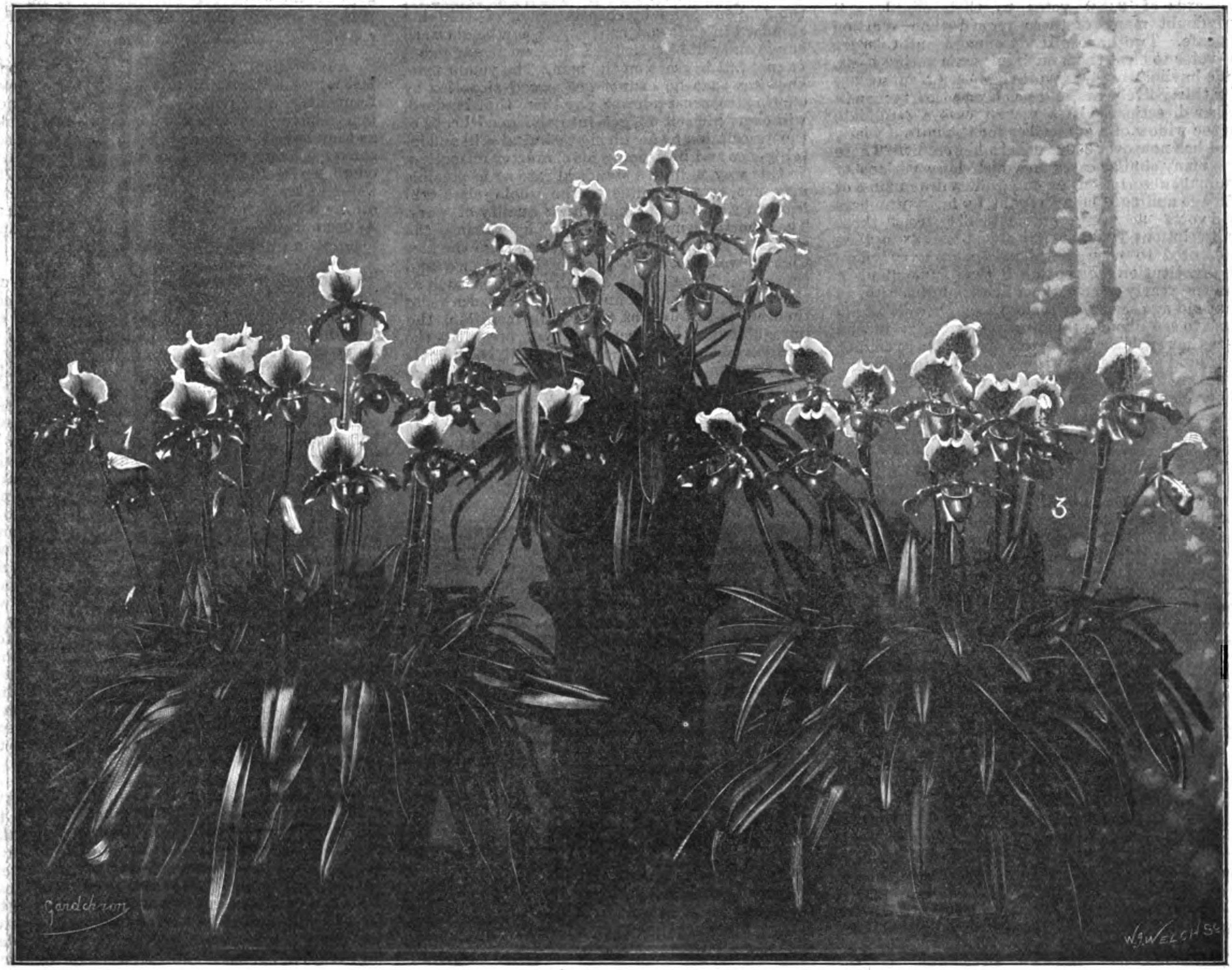


FIG. 14.—THREE WELL-FLOWERED CYPRIPEDIUMS.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE GARDENERS' BENEVOLENT.—The need for this institution is shown in the voting paper just issued to subscribers, on which there appear the names of no fewer than fifty-six applicants for pensions. Seeing that the fund admits of the election of but eighteen candidates, the chance of election on the 19th inst. for those who have not already a good number of votes to their credit is small. Sad it is to find so large a number of applicants. Out of the entire number forty-seven have been subscribers for few or many years, or are the widows of subscribers. No fewer than thirteen candidates have now upwards of 2,000 votes to their credit, and no doubt many of these regard their election as safe. Two have already enough and to spare of votes to elect them on last year's voting basis. One having over 4,000 votes has been a subscriber for thirty-five years, and has been a thrifty man in other directions. In a second case a candidate is the widow of a subscriber for thirty-four years, and has now over 3000 votes to her credit. There are many similar cases in which long periods of annual subscriptions of one guinea are in time of old age and need being repaid by large numbers of votes accruing automatically from these subscriptions. What an object-lesson is thus presented to young gardeners who now ignore the Institution, not so much that subscribing a guinea yearly is so great a financial difficulty. as that old age seems so remote that there is ample time to see about providing for it. Pity indeed is it that such should be the case! There cannot be found anywhere a wiser or a safer investment than an annual subscription to the Gardeners' Benevolent. Blessed is the man who in old age may never need its aid. Wise is he who in any case does make such provision, for who can foretell what time may bring to any of us? The premium is indeed small in comparison with the benefits. *D.*

BRITISH GARDENERS' ASSOCIATION.—It is gratifying to be assured by those who are active in the promotion of this Association that it is steadily growing, some head gardeners, who at first held aloof, being now keen to get it established. There is, as was stated some time ago in your columns, every prospect that it will grow and adapt itself gradually to circumstances, and prove beneficial alike to employer and employed. Those employers who believe that a well-managed garden is worth paying for, will not hesitate to pay a reasonable rate of wages for intelligent, trained gardeners recommended by this Association; indeed, it is known that in many private gardens, especially in the North of England, the rate of pay and hours of labour are better than those prescribed by the Association. We are forced to measure the value of work by the wages of the workers and to respect the worker according to the amount of his earnings. Judged by this standard a gardener is lower in the scale than an ordinary mechanic for the simple reason that his labour does not realise as high a price. But every one conversant with the matter knows how unreasonable this state of things really is. Gardening is an occupation which should make some demand on the gardener's self-respect. He should not suffer violence to his feelings by working for a lower rate of pay than is reasonable and fair. In the words of J. S. Mill, he should show a "determination to preserve an established standard of comfort." This question of wages is worth consideration because some gardeners have expressed doubts as to the wisdom of the Association interfering with it. We know that the scale recommended is reasonable, and we also know that employers recognise the value of a standard that is put forward by a body of men who are actuated, we are convinced, by worthy motives. The Association will serve a useful purpose by acting as an employment registry office. Employers can apply to it with confidence for competent, trustworthy men, whilst the members, if treating themselves, will be supported by the standard terms set forth by the Association, and the feeling that the Association is behind them. There must always be prominent in the mind of the gardener who thinks of the future that to-morrow may see him out of employment. Hitherto the nurserymen have supplied many gardeners with situations, but their interests are not those of the gardener, and when a low rate of pay is offered the nurseryman does not feel called upon to exert himself in favour of more reasonable terms, but sends a man at the price named. The result is too often most unsatisfactory to all concerned. The Gardeners' Association will be in a position to bargain for the best interests of its members and of the would-be employers, as by means of its branches scattered all over the kingdom it will be in possession of information as to situations and men that will enable it to fit the place with the right men. It cannot hope to provide situations for all gardeners, but it can take such steps as will assure those who are successful in the competition for situations of a fair return for their labours, and by choosing men of as high a standard in skill and capacity as can be obtained employers will be satisfied. Such an arrangement cannot fail to react on the men. The young man, knowing that he cannot get a good situation by offering to accept lower pay than the standard, will exert himself to get into the good books of the Association by acquiring technical skill and intelligence and by keeping his character unspotted. In this way as high a standard rate as is possible may act as a stimulus to the whole class and lead to a correspondingly high quality of work. That horticulture would gain by raising the status of the workers is quite clear from the fact that it would attract greater intelligence and capacity. Trades with a high standard, such as the cotton-spinners and engineers, draw to themselves the pick of the young men, and the unregulated trades have to put up with the inferior labour that remains. It will be difficult for the Association to maintain any effective control over entrance to the profession, but it can insist on boys being put through a definite course of practical instruction in the work. It may also be in a position to prevent unscrupulous gardeners from taking on too many boys and turning them adrift as soon as they begin to ask journeymen's wages. *Head Gardener.*

CHRYSANTHEMUM MRS. SWINBURNE, AND SPORT.—I enclose a flower of Mrs. Swinburne, and one of a beautiful yellow sport from that variety, which has been named Mrs. George Beech. The flowers were from late buds. Mrs. George Beech was a root-sport of two plants bought in last year; one came with three beautifully rich yellow flowers, exactly in form like Mrs. Swinburne; the cuttings from this plant were propagated in the usual way, and all have come true this season. To get these varieties in flower for the November shows the growths must be stopped at the end of April, but natural first-crown buds will be grand for the December shows. An Award of Merit was gained by Mr. H. J. Jones for flowers of Mrs. Swinburne at one of the Royal Horticultural Society's meetings. *Exhibitor.* [The yellow flower appears to be similar to that of Mrs. Swinburne, except in colour. Ed.]

THE CENSUS OF DESSERT APPLES. — In looking over the very valuable tabulated note which appeared in the *Gardeners' Chronicle*, November 5, p. 315, I was not a little surprised to find that the old favourite Wyken Pippin received only seven votes as against 100 for the Worcester Pearmain; the former is a winter Apple, the latter an autumn one. The flavour of the Wyken Pippin is far superior to that of the Worcester Pearmain, but what the latter is short of in flavour is made up in colour, which in my opinion is its only recommendation. In the window of a first-class fruiterer's shop in Birmingham, I saw the Worcester Pearmain making a grand show: it was ticketed 3*d.* per lb. No other Apple in the window was priced so high. Being so poor in flavour I am afraid it will eventually have to take an inferior position. In the Midland counties and perhaps more especially round hereabouts, the Wyken Pippin is in great favour, being considered amongst farmers the best of all amongst dessert Apples; but it also will, I fear, have to take a back seat when such Apples as Cox's Orange Pippin, Adam's Pearmain, and many others become better known. Of the Wyken Pippin a fairly truthful tradition is generally believed in in this neighbourhood, namely, that this Apple was originally brought from somewhere in the Netherlands by Admiral Craven, who was an early member of the present Craven family of Combe Abbey, and planted by him in his garden at Wyken Manor, near Coventry. This tree was blown down, and its "butt" was brought to Combe whilst I was there. There is also in this neighbourhood another Apple, viz., the Temple Pippin, whose history unfortunately is not so well known. It is an excellent cooker and keeps well, and is much thought of hereabouts. Adjoining this parish is the parish and church of Temple Balsall; whether the Apple originated there I cannot say, but a good many people are of that opinion. If anyone knows of the whereabouts of its origin perhaps he will kindly let us know. *W. Miller, Berkswell.*

ASPARAGUS SPRENGERI (see illustration in last issue).—Plants of this species have flowered frequently and abundantly with us, but never before have the fruits developed in such numbers as they have this season. I am forwarding some sprays bearing fruits, also some sprays of A. decumbens in flower. *A. Munro, The Gardens, Itton Court, Chepstow.* [Excellently berried growths of A. Sprengeri, and well-flowered growths of A. decumbens. They are certainly well adapted for growing together in baskets. Ed.]

CUCUMBER-DISEASE.—There is no sure cure known but that of cupric sulphate, more commonly known as blue vitriol; and infinite care has to be taken in its use as a preventive. If the following directions are carried out strictly by some trustworthy man, who will take the greatest care that his hands are free from cuts or sores, he may be successful. Procure cupric sulphate from some reliable firm, and have it reduced to powder before buying it, as the means of doing this are not always handy in a market nursery, and when powdered it is more easily dissolved. Procure a wooden pail, or better, an earthenware pan, that will hold 4 gallons, and put into it 2 ounces of cupric sulphate; then add a small quantity of water, and stir with a stick until well dissolved; then fill up the pail with water, and well stir the whole. To a 2-gallon can of water put half a pint of the solution, and stir until well mixed with the water, when it will be ready for use. One canful will at first be sufficient for four plants, but as the plants grow larger one canful will be needed for three plants, and should be applied at least twice a week. The cans which are used should be well washed out as soon as the work is finished, as the solution would soon eat into them. *C.* [See Mr. Willis's note on the subject on p. 13 of our last issue. Ed.]

THE ROYAL HORTICULTURAL SOCIETY'S VEGETABLE SHOW.—The announcement in the *Gardeners' Chronicle* Almanac (the only one, also) that it was proposed to hold an exhibition of vegetables at the Horticultural Hall on September 12 next, caught the eyes of some of our leading vegetable growers, who were alarmed, on the ground that, wishing to be at the great International Exhibition at Edinburgh the next day, they could not possibly exhibit on the 12th at Westminster. I was by them invited to urge the postponement of the vegetable show on that account, and on representing this fact to the Secretary (the Rev. Mr. Wilks), that gentleman readily accepted the next possible meeting for the show—October 24. On September 26 the National Rose Show takes place, and on October 10 the great show of British fruit is held, hence October 24 is the earliest available date. Will all vegetable growers or exhibitors please to note this new date? *A. Dean.*

THE BOARD OF AGRICULTURE AND GARDENERS.—I should like to draw the attention of the gardening public to a new departure on the part of the Board of Agriculture. This consists of the issue by them at a purely nominal price of the first 100 of their well-known leaflets, bound. The leaflets are the work of the highest authorities, and principally deal with the ills and evils which beset those "on the land." They range from that Gargantuan ill—income tax (certainly one of the biggest to those whom it attacks), through such visible evils as the Daddy Longlegs, to such comparatively invisible foes as the Black Currant Bud Mite. Very nearly all the leaflets will be found of interest to the gardener, and as the result of a rough count I should say that 80 out of the 100 intimately concern him. Several of them I regard as being likely to be of the highest value to the market grower. I will give a selection of their titles, thinking that this may be the means of many growers writing for the book :—"Grading and Packing Fruit and Vegetables," "Red Spider," "Root-Knot Disease in Cucumbers and Tomatos," and "Cucumber and Melon Leaf Blotch." In several instances the use of potassium sulphide, commonly known as liver-of-sulphur, in solution as a spray as a fungicide is commended. I can give personal testimony to the value of this, but so far as my experience goes potassium sulphide is by no means in very general use. Having thus very briefly and partially indicated the value the volume possesses to horticulturists, it remains to tell how it can be procured. This any interested person can do by sending an unstamped application, with 6*d*., to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, S.W.; and he or she will do well to at the same time ask for the remaining leaflets of the series (unbound). The latest of these is, I believe, No. 116, which deals with the "Sleeping Disease of Tomatos." The relations of the Board to its public—what it does do and what it might do—is a very interesting subject, but this I will not enter upon on this occasion. I hope that the issue of this valuable work at a nominal price is but the prelude to other issues, and I can point out to the Board a concession on their part which would be very grateful to gardeners. It is a considerable reduction in the prices of the Kew *Hand-Lists*; the prices of which are at present by no means nominal. *"Jason."*

DAHLIA THE MIKADO.—In reference to my note on p. 13 concerning the Dahlia "Mikado," I may add that there is still a third variety in the trade called "Mikado." It has single flowers, and the colour is golden yellow at the points, and the base of the florets and the remainder red. It grows about 4½ feet high. Of course, it is an old variety, but still is offered in catalogues for 4*d*. or 5*d*. each root. *Frank Koehler.*

MYROBALAN PLUM. — (See enquiry in last week's *Gardeners' Chronicle*, on p. 16).—The Myrobalan Plum is much superior to the Thorn for hedging purposes, that is as regards quickness of growth and impenetrableness of fence. It also makes a pretty hedge if trimmed annually, as all hedges should be. Within the last seven or eight years I have supplied and superintended the planting of thousands of the Myrobalan Plum for hedging purposes, and they have formed good living fences within a space of three years from the time of planting, The plants will grow almost anywhere and under the most ordinary conditions. But the more favourable the conditions are regarding soil and method of planting, the quicker and better will be the results obtained within a given time. The ground (pasture land) was simply dug a spit deep and from 15 to 18 inches wide, and the planting was proceeded with in the process of digging, the plants being set 6 inches apart zig-zag in the row, the soil being trodden more or less according to the nature and condition of the soil at the time of planting to make it firm round the roots. Assuming the planting to be done in late autumn or early spring, the plants should be cut down to within about 15 inches of the ground twelve months from the time of planting in order to insure a good foundation and a thick and impenetrable hedge within as short a space of time as possible. *H. W. Ward, Rayleigh.*

—— I planted several thousands of the Myrobalan Plum when in Scotland, but found it no substitute for Quick there. Hares and rabbits are also very fond of the plants, which require rich soil to grow well. *Geo. Duncan.*

FOSSIL PLANTS.—I read Mr. W. Miller's letter on p. 12 with much interest. In it reference was made to "fine avenues and isolated specimens of Araucaria imbricata to be met with in various parts of the country." The only fine, or anything approaching fine, avenue of the Araucaria I have seen was observed at East Dean Park, Lord Wimborne's place near Bournemouth, some years ago. The trees appeared to be quite at home in the light dryish soil characteristic of Bournemouth generally, and the warm sheltered position which they occupied. The finest specimens I have seen are growing in the vicarage grounds at Alderbury, near Salisbury, the rectory grounds at Rayleigh, and in a cottage garden at, or near, Ightham, near Sevenoaks, all the trees being located in somewhat favourable positions as regards soil, and sheltered from north and east winds. Regarding Taxodium distichum, there are two good specimens growing in the grounds at Longford Castle near the waterfall, and within a couple of dozen yards of the rivers Avon and Ebele. One specimen is considerably larger than the other, and I should say is now over 100 feet in height, and of good girth of trunk. There is even a finer specimen than this to be found growing on the bank of a tributary to the river Test, in the grounds at Broadlands, Romsey. This is the finest tree of the kind it has been my good fortune to see in any part of England, Ireland, or Scotland. All the trees of the deciduous Cypress named, it will be observed, are growing in moist situations, as mentioned by Mr. Miller. *H. W. W.*

NOVELTIES OF 1904.

(Continued from p. 2.)

Stove and Greenhouse Plants.—The finest new plant of the year has been the gorgeous ruby-crimson Gloriosa Rothschildiana, introduced from Uganda, and shown from the Right Hon. Lord Rothschild's gardens, Tring Park (gr., Mr. A. Dye). This was the only plant to which the Floral Committee awarded a First-class Certificate out of the large number of beautiful specimens exhibited at the last Temple Show.

Nicotiana Sanderæ has been shown by Messrs. Sander & Sons in quantity. The elegant plants bear showy flowers of various shades of magenta, rose, and crimson, with an occasional white form, and for which a First-class Certificate was awarded at the Royal Horticultural Society's meeting on May 3, 1904. It is an ideal garden plant, as it may be grown from seeds freely, and used either as a greenhouse decorative plant or for planting in the flower-garden, for massing in beds or for occasional clumps in the herbaceous borders or shrubberies. Other good plants of the year shown by Messrs. Sander were Clerodendron myrmecophilum, Alpinia Sanderæ, and a number of very handsome hybrid Begonias between B. Socotrana and B. Rex, two of the best being B. Mrs. H. G. Moon and B. Fearnley Sander.

Messrs. Jas. Veitch & Sons, Chelsea, continue to improve their fine strain of perpetual-flowering Begonias of the "Winter Cheer" class, and in the pretty dwarf floriferous Begonia Washington they have the best of "bedders." From their famous strain of Hippeastrums, H. Ronda was certificated, and the firm is credited with the handsome new Nepenthes "F. W. Moore," and their Eupatorium vernale is one of the most useful species for the supply of flowers for cutting.

Various other useful plants in this and other classes will be found enumerated in the list, to be published next week, of good plants illustrated in the *Gardeners' Chronicle* during 1904.

Tuberous Begonias.

These beautiful plants have been brought to such a high state of perfection by the several firms cultivating them, that it has become difficult to secure superior novelties. But although the awards are few, Begonias have never been seen in greater excellence than last year. The best of the certificated varieties were B. Argus (double crimson-scarlet), B. Avalanche (double white), and B. Lady Curzon (salmon-red), all of Messrs. Blackmore & Langdon, Twerton, Bath; B. Mr. W. H. Edwards (double blush-white), of Messrs. T. S. Ware; B. Canopus (fringed double yellow), of Messrs. B. R. Davis & Sons; and B. Margaret Gwillim (large double yellow), of Mr. A. Ll. Gwillim.

Ferns.

As with most other classes of plants, the interest centres in the "decorative" kinds. Pteris Hilli and P. Binotii, of Messrs. J. Hill & Sons, are very useful additions; Pteris Sumnersi, P. cretica capitata, and Lomaria Mayi, of Mr. H. B. May, Edmonton, are graceful plants likely to be grown in quantity for market; and Cyrtomium falcatum Butterfieldi, of Mr. P. T. Butterfield, Waltham Cross, is a graceful variation of a useful species.

Miscellaneous Bulbous Plants, &c.

The best Hippeastrum certificated during the year is H. Snowdon, the finest white of the best "florists'" shape, which received a First-class Certificate when shown by the raiser, Mr. Fielder gr. to Mrs. Burns, Hatfield, on April 19.

In the Nerine Bowdeni, shown by Messrs. Robert Veitch & Son, Exeter, is exemplified the remarkable occurrence of a new Nerine with pink flowers, better than any imported before; and H. J. Elwes, Esq., Colesborne, Andoversford, who now takes the lead in raising hybrid Nerines, had two pretty new varieties in his group shown October 18, viz.—Nerine Lady Ffolkes and N. Miss Shelley, both having delicate pink flowers, and both were accorded Awards of Merit. At the same meeting similar awards were made to ten new Chrysanthemums, additional varieties of Chrysanthemums securing awards for novelties also at other shows.

Hardy Flowers.

A welcome new set of hybrid Iris × Regeliocyclus was shown by Mr. C. G. Van Tubergen, junr., of Zwanenberg, Haarlem, on May 17. Eight of the most beautiful received awards. Other worthy novelties have been added to the genus, notably the Iris Lorteti alba and I. Haynei, for which Messrs. W. Cutbush & Sons, of Highgate and Barnet, received awards.

Messrs. Kelway & Sons, Langport, continue to improve Pæonies, Gladioli, and other showy flowers for which they are famous, and have improved the qualities of each class. Mr. James Douglas, Edenside, Great Bookham, has been successful with Auriculas and Carnations, in the latter being joined by Mr. Martin R. Smith and others. Various other worthy novelties were exhibited, some of them already certificated, and others (as with the grand Meconopsis of Messrs. Jas. Veitch & Sons) reserved for that honour in the coming year.

Narcissus.

The Daffodil shares with the Iris the distinction of being the Orchid of the open-air garden, and embraces some of the most beautiful and graceful flowers, well improved by the gardener's efforts. Miss Willmott, Great Warley, is one of the best cultivators, and has one of the finest collections. Of the best novelties in this class Narcissus Great Warley (a lovely flower nearly 4 inches across), N. Warley Scarlet (with orange-scarlet cup), N. Zenith (white with flat orange-scarlet corona), N. Flag of Truce (white), N. White Ensign (white with lemon-yellow corona), and N. Count Visconti (canary-yellow), have secured awards. Mr. A. Kingsmill's best was N. Bennett-Poë; Messrs. Barr & Sons', N. Elvira, N. Henry Vilmorin, N. Pyramus—all Awards of Merit. N. Surprise was shown by Messrs. Pope & Son.

Potatos.

These have occupied much attention, and the list of illustrations given during the past year gives references to some of the best. The introduction of new varieties raised from seeds is an important work which should be encouraged, as apart from any consideration as to the better quality of the new varieties when compared with the old, there is no doubt that the introduction of such newly-raised varieties offers the best means of combating the dreaded Potato disease.

The relative merits of the different varieties of Apples and Pears have also been gone thoroughly into, and attempts made in our own columns to indicate the very best. Most of those considered the best are not new, but being the best they have been illustrated, and the figures will be found in the *Gardeners' Chronicle*.

(To be continued.)

POTATOS.

EARLY CULTURE IN CORNWALL. — From a Cornish contemporary we note that the market gardeners in the Penzance and Marazion districts have almost finished taking in their supplies of seed Potatos of the early varieties for the coming season, and of which many tons have been daily put on the shelves for sprouting for some weeks past. The varieties chiefly in demand this year are the Duke of York and the British Queen. The first-named is generally recognised as being the very earliest to mature for market purposes, and the Queen is the favourite to follow in succession. Myatt's Ashleaf, which, until the introduction of the Duke of York, was the earliest general cropper, is still favourably regarded by many growers, although the quantity sold is much less than formerly. The recent varieties, of which so much has been written, and for which such high prices have been paid in Lincolnshire and elsewhere, have not yet taken any general hold on the West-country grower, although this season a few of the newer varieties, disease-resisting and otherwise, are being tried on many farms. There have been many enquiries for May Queens, and a few parcels have been secured and quickly disposed of, whilst several lots of the variety Sir John Llewelyn have also been distributed. Prices for the ordinary kinds, although somewhat high, are considerably below those of last year, and towards the end of the season have become somewhat firmer, due probably to the fact that the demand is equal to the supply. The bulk of at least early seed Potatos comes from Lincolnshire, which is the premier Potato-growing county in England. An enormous amount of capital is being laid out in seed, and it is to be hoped that next season will be more remunerative than the last, when low prices were realised for the early crops after the first few days' lifting.

Obituary.

ARTHUR W. WADE.—We regret to announce the death of Mr. A. W. Wade, who immediately previous to his death was in the employ of Messrs. Caldwell, nurserymen, of Knutsford, Cheshire. Mr. Wade met his death by falling from his bicycle when riding towards his home at Knutsford, on the evening of January 2. He died unconscious a few hours after the accident had occurred. Previous to entering the service of Messrs. Caldwell, Mr. Wade was for some time foreman in the herbaceous department at Messrs. Clibrans'. He had also filled a similar position with Messrs. Wallace & Co., of Colchester. Mr. Wade was once employed at Kew, which gardens he left in March, 1891. Deceased, who was thirty-six years of age, leaves a widow and young family.

JOHN R. STIRLING.—The many friends of Mr. John R. Stirling, late head gardener at Buckingham Palace, will hear with regret of his death, an event which took place rather suddenly on December 17 at the little village of Ryme, in Dorsetshire, whither he had retired on the receipt of a pension after twenty years in the Royal service. Deceased commenced his gardening career in the early sixties at Petworth, continuing at two or three of the leading places in the South of England. Four years as foreman at Enville Hall followed, after which he went to South Wales as gardener to Lord Swansea. In 1882 he received the appointment at Buckingham Palace, and remained there nearly twenty years, earning the esteem of all with whom he came in contact, alike from his high personal character and his gardening abilities. When shortly after the death of Queen Victoria considerable alterations were made as to the upkeep of the Palace gardens, Mr. Stirling retired on a pension to a remote Dorset village. He has unfortunately not lived long to enjoy his well-earned rest. He leaves a widow but no family. *E. L. B.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

JANUARY 3.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair), Dr. Cooke, Professors Boulger and Church, Rev. W. Wilks, Messrs. Saunders, Bowles, Shea, Worsley, Odell, Gordon, and Chittenden (Hon. Secretary).

Henslow Testimonial.—Dr. MASTERS reported on the progress made towards the completion of this. The subscriptions, confined to members of the Committee, amount to about £40 at present.

Diseased Carnations.—Mr. SAUNDERS reported concerning the Carnation plants sent to the last meeting that he could find no trace of eelworms or insects present; and Dr. COOKE wrote: "The plant examined gave no evidence of fungus attack, but the root was completely rotted with moisture. All the mischief evidently arose from mistakes in cultivation, and this is sufficient to account for the result."

Fungus on Agapanthus Stem.—Dr. COOKE reported on this, specimens of which were brought to the last meeting by Mr. Worsley: "The black elliptical and elongated spots on the dead stems are merely indications of the common saprophytic mould, Cladosporium herbarum. Being kept in a damp atmosphere for two or three days, every spot was velvety with the threads and covered with the spores."

Oranges attacked by Scale.—Respecting the Oranges from Seville badly attacked by scale, Dr. COOKE reported: "There was not the slightest trace of Fumago or Capnodium, or even of fungus or fungus mycelium of any kind, except Penicillium glaucum, which soon made its appearance and produced a plentiful crop."

Pear Diseased.—Mr. SHEA showed a Pear which had several brown decayed spots in the flesh, but seemed quite normal externally. Dr. COOKE undertook to report upon it at the next meeting.

Spots on Phyllocactus.— Diseased specimens of Phyllocactus shown by Mr. WORSLEY were referred to Mr. SAUNDERS and Dr. COOKE.

Germination of Sechium edule.—Mr. ODELL showed specimens of the curious fruits of this plant, known as the Chaco or Chocho, containing germinating seeds. The plant belongs to the Cucurbitaceæ, and the fruit is a pepo, containing only one seed. The seed germinates within the "pepo," and is inseparable from it. Numerous roots are produced on germination, and the stem grows out through the fruit wall, which subsequently becomes woody, while the cotyledons remain behind in the fruit. Some discussion took place as to the fate of the radicle, which appears to be of very limited growth. The fruit is used like the Marrow in the West Indies and in the United States of America. (See fig. in *Gardeners' Chronicle*, Dec. 22, 1900, p. 450.)

Big-bud in Hazel.—Buds of the Hazel attacked by the bud-mite were referred to Mr. SAUNDERS, who undertook to report upon them. (See also fig. 15.)

Plant for Naming.—Mr. J. R. BAKER, of West End, Southampton, sent some branches under the name of Thuya Lobbi. This naming was confirmed by Dr. MASTERS, T. Lobbi and T. gigantea being garden names for the true T. plicata.

Diseased Beech.—Mr. D'OMBRAIN sent specimens, which Dr. COOKE kindly undertook to examine and report upon.

Variety of Douglas Fir.—Dr. MASTERS showed a curious short-leaved form of the Douglas Fir which came up among a batch of seedlings in Holland. It was at first thought to be a hybrid of that species with Tsuga Sieboldi, but a transverse section of the leaf at once showed it to be a true Douglas Fir.

NATIONAL SWEET PEA.

WE are informed that it has been arranged to hold the 1905 exhibition in conjunction with the Royal Horticultural Society at Vincent Square, S.W., on Tuesday, July 4. Upwards of £90 are offered in money prizes, and Messrs. Sutton & Sons are presenting a Silver Challenge Cup, value fifteen guineas, in Class 1, the Society giving the winner a Gold Medal as a permanent memento of success. The schedule will be in the hands of members by the 14th inst. The *Sweet Pea Annual* will be published one week later, and will be sent free to members. Full particulars on any matter connected with the Society will be gladly furnished by Horace J. Wright, 32, Dault Road, Wandsworth, London.

HORTICULTURAL CLUB.

JANUARY 3, 1905.—The usual monthly dinner of this Club was held at the Hotel Windsor, on Tuesday, the 3rd instant, when Sir John Llewelyn, Bart., took the chair, and a good muster of members and guests assembled to hear the subsequent chat, rather than lecture, of Mr. Joseph Cheal, entitled "Talks on a Journey to Egypt and Syria," illustrated by numerous lantern slides. Unfortunately, the generally dry and desert character of the region traversed by Mr. Cheal detracted inevitably to some extent from its horticultural or botanical interest, but this element was by no means altogether absent, since the celebrated home of the Lebanon Cedars was visited; and some very interesting photographs were shown in this connection, while Mr. Cheal remarked that the generally-received idea that but few remained in the original habitat of these magnificent trees was erroneous, since many thousands still remain on the Lebanon slopes in the district he visited, and many also in another and distant one. The chief enemy to the trees appears to be the goats, which destroy the seedlings; and although steps are said to have been taken by the Turkish Government to protect them, these steps are too much on the vague and uncertain Turkish lines to be of much avail.

Some specially interesting slides illustrated the culture of the Mulberry-tree in the silk-producing districts. Here the mountain slopes are covered with rudely-built terraces constructed of alternate banks of stone and beds of soil, in which the trees are grown in rows, and kept cut so hard back as to be little more than standard bushes. The white Mulberry appears to be the prevalent kind, only a few of the red variety being grown for dessert purposes.

The Date Palm is another and very important staple, and it has been said that a single Palm will support a man by its produce; it must however be borne in mind that the needs of the man in question are orientally meagre. Locust trees, a splendid specimen of the Banyan [?], antique and weird Olive trees, huge Opuntias with pseudo-leaves as big as tennis-bats, Bougainvilleas of most luxuriantly rampant growth, steeple-like Cupressus, and an extremely curious tree called the Cucumber tree, with long Cucumber-like but hard and leathery fruits, suspended on 6 to 8 feet stalks, all figured on the screen, intermingled with oriental landscapes and scenes embracing camels, Arabs, ancient rock inscriptions, primitive ploughs, native methods of irrigation, cookery, &c., culminating in a swarm of locusts, covering the ground and the herbage thereon, like a veritable insect blizzard. An interesting fact in connection with the extremely rude methods of irrigation in vogue, consisting of wooden wheels with loosely attached earthen jars suspended by rough cordage, was that several attempts had been made to improve this by modern machinery, but all in vain, for the reason that no facilities existed for the inevitable repairs of ironwork, while the primitive apparatus could be always and immediately repaired on the spot by the natives themselves at comparatively little expense. Some views of Jerusalem and other places mentioned in Holy Writ were also shown, and as Mr. Cheal's visit was connected with some mission work in Syria, he was able to accompany their exhibition with many interesting remarks. No discussion followed the lecture, since Mr. Cheal had invited those present to make any desired remarks as he proceeded; and this was done.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

JANUARY 5.—The first meeting of the new year brought together a nice collection of plants.

Messrs. J. CYPHER & SONS, Cheltenham, had a magnificent group, consisting principally of well-grown Cypripediums, hybrids and species. A pretty feature of the group was a mass of well-flowered Trichopilia suavis. There was also a good plant of Cypripedium insigne var. Luciani (Silver Medal).

G. W. LAW-SCHOFIELD, Esq., Rawtenstall (gr., Mr. Skill), exhibited a collection of Cypripediums, among which were two fine varieties of C. × Euryades, viz., C. × Euryades var. splendens and C. × Euryades var. magnifica. C. × aureum var. Surprise was also worthy of note.

W. THOMPSON, Esq., Stone (gr., Mr. Stevens), exhibited a grand plant of Odontoglossum × Mulus with eight large spikes of flowers, a fine example of cultivation, for which a certificate was given.

Messrs. SANDER & SONS, St. Albans, exhibited Cypripediums, &c.

Messrs. A. J. KEELING & SONS were awarded a Bronze Medal for a group in which were some distinct hybrid Cypripediums.

Messrs. H. LOW & Co., Enfield, staged Cypripedium × Minos Young's variety, C. × macrochilum, and others.

Messrs. COWAN & Co., Ltd., Gateacre, staged some good Odontoglossums, including O. × crispo-Harryanum, O. × Wilckeanum, and O. × loochristiense (Vote of Thanks).

Mr. D. MCLEOD, Chorlton-cum-Hardy, exhibited several plants, including a fine form of Cypripedium × triumphans and C. × Euryades var. (Vote of Thanks).

Mrs. S. GRATRIX, Whalley Range (gr., Mr. Cypher), exhibited the only plants to which awards were made —viz., Cypripedium × The Czar, a cross between C. insigne var. Sanderæ × C. Sallieri var. Hyeanum; and C. × General Stössel (parentage unknown), a good hybrid, quite distinct; both received Awards of Merit.

The following awards were made at the meeting on December 15, 1904.

FIRST-CLASS CERTIFICATE.

Cypripedium callosum Sanderæ Jules Hyes var., from Mrs. S. Gratrix.

C. Leeanum corunna triumphans, from Mrs. Ardern.

Lælia-Cattleya Donuii, E. Ashworth, Esq.

Cypripedium Arthurianum pulchellum, from A. Warburton, Esq.

AWARD OF MERIT.

Cypripedium mirabile barbatum naurum × callosum, from T. Statter, Esq.

MEDALS.

W. Duckworth, Esq., Gold Medal.
W. Laverton, Esq., Bronze Medal.
J. C. Cowan & Co., Silver-gilt Medal.
Messrs. Sander & Son, Bronze Medal. *P. W.*

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

JANUARY 9.—At a meeting of the Committee held on Monday evening last, Mr. Curtis in the chair, twelve new members were elected and one nominated. Fifteen members have received sick benefit during the past month, the amount of sick pay being £36 18s. The usual grants were made to members on the Benevolent Fund. A grant of £5 was also made to a member in distress who had recently lost his wife.

GARDENERS' DEBATING SOCIETIES.

ISLE OF WIGHT HORTICULTURAL ASSOCIATION.—The annual general meeting of the above Association was held at Warburton's Hotel, Newport, on Saturday, January 7. Dr. Groves, B.A., J.P., presided over a good attendance of members. The Hon. Secretary, Mr. A. Kime, read the report of the Committee and the balance-sheet, which were considered satisfactory and were adopted. In addition to the Association being numerically stronger than last year, after all expenses are met. there is a substantial balance left in the hands of the Treasurer. The retiring officials were cordially thanked for their past services. Dr. Groves was unanimously elected Chairman and Treasurer of the Association; Mr. R. A. Sutton was elected Hon. Auditor; Messrs. Kime and Snook, Hon. Secretary and Assistant Hon. Secretary respectively. The retiring Committee was elected *en bloc*, with the exception of Mr. Snook for the Shanklin district, who is succeeded by Mr. J. H. Silsbury. A unanimous vote of thanks was accorded the Editor of the *Gardeners' Chronicle* for kindly inserting reports of the Association's meetings. Several new members were elected. Mr. Wm. Tee will lecture on "Carnations" at the next monthly meeting.

BECKENHAM HORTICULTURAL.—At the first gathering of this Society held in the New Year, a paper was given by Mr. P. Waterer on "Decorative Chrysanthemums." Mr. A. J. Baker, K.C.C., occupied the chair. The paper dealt with the methods necessary for producing a number of medium-sized blooms. rather than the usual three of exhibition size as generally grown. Mr. Waterer's method of cultivation is to pinch the shoots twice during the season. Some varieties he advocated disbudding to one bud on each shoot, while on other plants he retained three or four buds, according to which plan gave the best results. A pleasing basket of Chrysanthemums of the variety Robert Morgan, intermixed with Freesias, staged by the lecturer, was much admired. *F. W. P.*

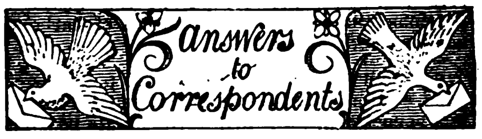
EGHAM AND DISTRICT GARDENERS'.—At the meeting of this Society held on January 3, an interesting paper was read by Mr. Brown, assistant in the Botanical Department of Cooper's Hill College, on "How Botany Helps us." The essayist invited his hearers "in thought," to take a general walk round, pointing out in passing through the various departments how the science of botany assists one to master many difficulties that arise from various failures of growth, and to understand the many diseases plants are subject to. The lecturer advised the more general study of botany by our younger gardeners. A discussion took place on some of the diseases that are met with in the immediate district.

CROYDON AND DISTRICT HORTICULTURAL.—The annual meeting of the above Society took place on Tuesday evening January 3, Mr. J. Gregory presiding. The following officers were duly nominated and elected:—President, Mr. J. J. Reid, Coombe Lodge, Croydon; Chairman, Mr. M. E. Mills; Vice-chairman, Mr. W. Bentley; Treasurer, Mr P. F. Bunyard; Hon. Sec., Mr. H. Boshier, 62, High Street, Croydon. The names of Messrs. A. C. Crowley and N. Waterall were added to the list of vice-presidents. Messrs. W. Tyrell and W. Veners were appointed to serve on the Committee *vice* Messrs. W. Bentley and W. Harris. Mr. Bunyard formally presented the Treasurer's report for the year ended December 31, 1904, from which it appeared that the receipts amounted to £52 16s. 3½*d.* and the expenditure to £51 1s. 11½*d.*, there was thus a balance in hand of £1 14s. 4*d.* The Treasurer's report was adopted. The Secretary's annual report gave a most satisfactory statement of the condition of the Society, and recorded success in all the Society's undertakings. The proceedings closed with votes of thanks to the Chairman and the officers, special reference being made to the services of the Hon. Secretary, Mr. Harry Boshier.

THE REDHILL, REIGATE AND DISTRICT GARDENERS'.—This Society held its fortnightly meeting on January 5, Mr. W. P. Bound in the chair. The lecture on this occasion was given by Mr. W. Blackwood, who took for his subject "The Cultivation of the Tomato." After briefly touching on the introduction of the Tomato, Mr. Blackwood devoted attention to the practical side of the question, giving much valuable information on raising the seedlings, and the best means of obtaining thoroughly strong and healthy plants. January, February, March and August were the most suitable months for sowing the seed and by making successional sowings the cultivator would have little difficulty in maintaining a good supply of fruit for the greater part of the year. The lecturer also dealt with the questions of temperature, soil, manures and diseases to which the Tomato is subject. A discussion followed. *F. C. L.*

TRADE NOTE.

WE are informed that Mr. J. E. Sadler, late of Messrs. J. Backhouse & Son, of York, has been appointed traveller for the northern district, representing Messrs. Wm. Wood & Son, Ltd., Royal Horticultural Specialists, Wood Green, London, N.



Answers to Correspondents

APPLES: *B. W. P. & Sons.* Many thanks for your communication. The census showed that there is an overwhelming agreement in regard to the best half-dozen varieties, as you will see on reference to the percentages given on p. 26 of this issue. At the same time we are aware that in particular gardens, owing to peculiarities of soil, altitude, or degree of shelter, the results obtained from certain varieties will not be exactly the same as the average results, even in the same neighbourhood. We quite agree with your appreciation of the varieties Dumelow's Seedling and Lord Suffield, and their inclusion in the best half-dozen can hardly surprise any fruit-grower, notwithstanding the liability of Lord Suffield to attacks from canker. The fruits of Maltster you have kindly sent us show that the season of this culinary Apple does not usually extend beyond the close of the year. It is grown chiefly in Nottinghamshire, where the trees grow freely and bear abundantly.

BEECH-TREES DYING: *W. J. W.* In the absence of specimens we suspect that the white downy appearance on the trees is due to an insect, the Beech-aphis, Chermes fagi. This is a common pest on Beech-trees, and is very frequently associated with canker. Spraying with petroleum emulsion is advisable where practicable.

BUD VARIATION: *X. Y.* We know of no means of inducing bud-variation, but insect-punctures will and do induce malformations. There is no separate work on bud-variation, but you will find much information in Darwin's *Animals and Plants under Domestication*, Masters's *Vegetable Teratology*, and a special article in these columns in 1891, January 10, 17, 24, and February 21.

CARNATIONS: *Correspondent.* We do not know the composition of Wagner's Solution for use in the culture of Carnations.

CINERARIAS: *T. B. A.* If you will cut through the collar of your plants from above downwards you will see a cavity formed by the grub of some insect. You must keep watch and try to ascertain what the insect is.

CURRANT BUDS: *E. S.* Your inference is correct; the shoots are badly infested with the Currant-bud mite, which causes the buds to have a swollen appearance. We should advise pruning the bushes very hard back, removing the soil from the surface beneath, and encouraging new growth by the addition of a suitable mulching of manure. Unless the plantation is young, however, grub the trees and replant on fresh ground.

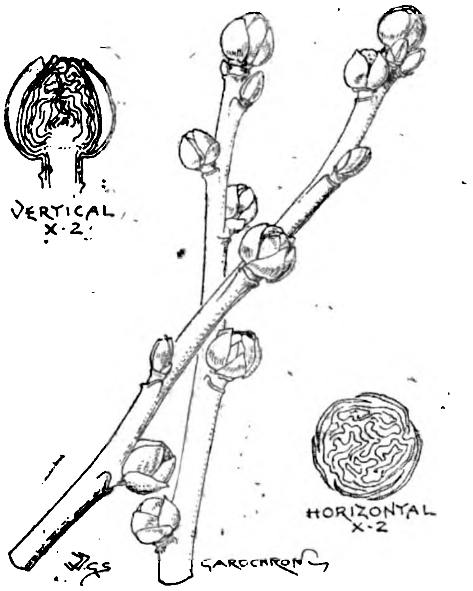


FIG. 15.—SHOOTS OF THE BLACK CURRANT AFFECTED WITH BUD-MITES.

GRAFTING HOLLIES: *H. E. C.* If the green-leaved Hollies you intend to use as stocks are as high as you wish your variegated standards to be, do not graft them, but in June or July insert buds of your variegated varieties either in the main stem or in the laterals of the stocks. If the stems are of moderate stoutness insert two or three buds in each, or if they are put in the laterals then put one bud in each, pushing the shield close down into the angle made by the lateral with the main stem. Bind the stem around the inserted bud closely with budding-cotton, and smear a thin layer of grafting-wax over the tie. The grafting of Hollies is not a very certain means of propagating them, and should only be done to obtain dwarfs or pyramids, and then the grafts should be made close to the ground, while after the tie and wax has been put on, it is better to draw the soil in a ridge round the grafts to make sure of their growing. This should be done in April and May, when the stocks are just beginning to grow, and it is better to cut the scions a month before and to bed them in the soil till wanted. If properly done, and yours is a "Holly soil," it will take about three years for the plants to make respectable heads; but this period may be shortened by good cultivation and the use of manures. Wateriana (gold), Queen (silver), and Handsworth's Silver-striped are among the best varieties to make standards, and the Weeping Holly in both green and variegated varieties is very suitable for this method of cultivation.

HAIR EEL: *C. R. F.* The specimen you send is a good example of Gordius aquaticus, belonging to the Annelida class, possessing very simple structure. This is the commonest species of Gordius in Britain, of which the popular name is Hair-eel; and a notion still prevails in many parts of the country that it is nothing else than a horse-hair, which has somehow acquired life by long immersion in water. Gordii are extremely common in the River Thames.

Lycaste Skinneri Varieties: *J. B.* The flowers form a most interesting set of eight very fine and distinct varieties of this beautiful Orchid. These are L. S. alba, a fine pure white form; L. S. Lady Gladys, similar to alba, but with a slight blush tint; L. S. armeniaca, blush-white, with slight copper-coloured tint on the lip; L. S. Enchantress, a large blush-white; L. S. Beauty, rose-pink, with white labellum bearing bright rose-coloured markings; L. S. Amazon, a magnificent large flower; and two others, the one a dark form with fine crimson spotting on the lip. A flower of a very fine dark Cymbidium Tracyanum, and large blooms of three forms of Odontoglossum × Harryano-crispum, also accompany the Lycastes, all indicating a very high state of cultivation.

Names of Fruits: *W. H. S.* 1, Bess Pool; 2, Court of Wick; 3, Brownlees's Russet; 4, Winter Red Streak; 5, Reinette de Canada; 6, Ross Nonpareil.—*J. R. B.* Pear decayed. Apples, 1, Tower of Glamis; 2, Minchull Crab.—*W. E. H.* 1, Flower of Kent; 2, Brown's Seedling; 3, Augustus Pearmain.—*A. McAslam.* Cornish Aromatic.—*Thrapston.* 1, Dumelow's Seedling (Wellington); 2, Cox's Orange Pippin; 4, Scarlet Nonpareil.—*A. B.* Lord Lennox.—*H. Smart.* Beurré Sterckmans.—*J. H., Staffs.* Hollandbury.—*J. T. S.* Your Apple was too far decayed for us to identify the variety.

Names of Plants: *J. H. H.* Pleroma macranthum.—*J. A. C., Eastbourne.* Æschynanthus speciosus.—*B., Essex.* Cymbidium Tracyanum.—*F. G. B.* Dendrobium Phalænopsis and Oncidium tigrinum. The Dendrobium is a warm-house plant, but the Oncidium will grow with the Odontoglossum in a cool-house.—*A. C. F.* Cupressus (Retinospora) obtusa and Picea Morinda, small undeveloped specimen.—*F. C.* Phyllanthus nivosus.—*Japonica.* 1, Cymbidium giganteum; 2, Lælia anceps; 3, 4, 5, 7, all forms of Oncidium tigrinum; 6, Restrepia striata; 8, Odontoglossum Rossii majus, a very pretty form of it.—*V. M.* 1, Brassavola tuberculata; 2, Aspasia lunata; 3, Odontoglossum Lindleyanum; 4, Oncidium flexuosum; 5, O. sphacelatum; 6, O. crispum.—*W. D. D.* We are unable to name the Chrysanthemum.

Peach-trees Planted in Rows Across the House: *W. H.* You had better put one trellis across the house, and see first how a tree against this trellis will succeed in your Northern locality. If your garden were situated in the South of England, where there is a greater degree of sunshine, we should have no hesitation in advising you that the system would be satisfactory. At Buxted Park, near Uckfield, in Sussex, Mr. Prinsep, the gardener there, planted years ago a house 32 feet long and 18 feet wide (same width as yours) in this manner, and the results he obtains are excellent, the crop being in his own opinion heavier than could be got from trees on the roof and upon the back wall only. The house at Buxted has a "hip," or three-quarter-span roof, and trees are cultivated against the back wall, just as under the common system of planting. Then instead of having trees along the front of the house, there are seven rows of trees proceeding across the house from the path near to the wall to the front. The trees are trained to upright trellises, and 4 feet spaces are allowed between each row of trees. As we stated in our issue for November 22, 1902, p. 373, the system appears to be one that might be adopted with advantage in gardens of moderate size and convenience, providing the locality is a sunny one, where the outdoor crops usually ripen early. In colder or in northern districts, and in extra wide houses, it might happen that parts of the trees would not perfectly mature the wood. See also *Gardeners' Chronicle*, November 29, p. 401; December 6, p. 422; and December 20, p. 463, all in 1902.

Peat Soils: *J. D. C.* Peat soils contain an over-abundance of organic matter, and are therefore generally rich in what is called acid humus, in which it is well known our cultivated plants do not flourish. But if basic bodies, such as lime, wood-ashes, peat-ashes, &c., are added to the peat soils, they are changed gradually into ripe or mellow humus, and lose the acid properties; then it not only becomes fertile, but increasingly so when it has been subjected to fermentation, which is greatly hastened by the application of liquid animal manure. Peat soils are generally very poor indeed in all alkaline salts, of which lime and phosphoric acid are the most important, since these have been in great part washed out by the water which covered the peat deposits. We recommend an application of a mixture of superphosphate (high grade—say 37 per cent. phosphate) and quick-lime in equal proportions, to which may be added a little sulphate of potash, and apply this at the rate of 10 oz. per square yard of soil. Wood-ashes and soot mixed together are excellent fertilisers for peat soils. Basic slag may also be used with advantage at the rate of 8 to 10 oz. per square yard. Use liquid-manure much more abundantly for culinary vegetable crops than for flowering plants. The six hardy flowering annuals we recommend for the peat soils are Godetia (Lady Albemarle and Duchess of Albany), Clarkia elegans rosea, Mignonette, Schizanthus grandiflerus oculatus, Sweet Sultan in various colours, and Nemophila insignis. We strongly recommend you to plant Primula japonica, which is one of the finest of the strong-growing species, and succeeds well in the bog-garden or by the side of a stream or lake. The seeds of this species should be sown as soon as ripe. When once sown it seeds itself, and the young plants come up in hundreds, when they may be transplanted. They die down in the winter and remain dormant until the following spring.

Richardia (Calla) grandiflora [æthiopica]: *J. M.* No doubt your plants are affected with soft rot. Try to scoop out the diseased portions and apply a weak solution of carbolic acid or Condy's fluid.

Seedling Orchids: *T.* The first step is to get good, well-matured seed capules, and these are most successfully ripened if the plants bearing them are suspended near to the glass of the roof or placed on a shelf in a house having an intermediate temperature. The fruits take a long time to ripen, and when fully matured the seed capules of such plants as Cattleyas should be cut off, placed in strong paper or calico bags, and put on a shelf in a rather dry atmosphere to complete the last stage. When the seed-vessels split, the seed should be sown, or as much of it as is required, the remainder being kept dry for future use. The surface of the potting material of any other established Orchid which does not require drying off is a very good place to sow seed of Cypripediums and some other Orchids. But if it is intended to raise seedlings in large numbers, it is best to have a rather roomy glass-covered case, arranged in a moist and warm part of the house. In this case, previously prepared pots should be arranged on which to sow the seeds, and the seeds sown when ready, and the crosses duly recorded. Various materials are used for sowing the seeds on. Some prepare pads of sphagnum-moss covered with coarse calico, or material like Orchid-house shading; others use blocks of peat. Some use for Cattleyas, &c., pans of broken crocks with peat and charcoal on the surface, others discs of wood. When the arrangements are successful, the seedlings show signs of vitality by germinating in a few weeks, or it may be months. It appears that the seedlings will enter on the first stage on almost any material, but they often die off unaccountably afterwards. The object should be to get as many seedlings as possible into thimble-pots, four or five in a pot. The seeds should be sown on a previously-moistened surface, and they should not be allowed to get dry. A sprayer is the best means of keeping the pots and material moist.

Vanilla Culture: *M.* Considering the relatively small demand, the facility and cheapness of transit of the native pods, and the heat and expense requisite to grow the plant here, we do not think it would be profitable to embark in its culture in the Channel Islands. Try it on a small scale at first, in order that you may be able to form some idea of the risk involved.

Vine Mildew: *W.* A correspondent who at our request made trial of Campbell's Patent Vaporiser was thoroughly satisfied with the result, and recommends its use in glass-houses in which Grape-Vines, Peaches, Cucumbers, Roses, Chrysanthemums, and similar plants are grown. The principle consists in heating the sulphur in a vessel having a funnel-shaped outlet, the tube of which is loosely closed by a pyriform hollow glass ball, which rises or falls according to the pressure of the hot sulphur vapour inside, thus allowing of the passage of the sulphur vapour, but at the same time preventing the entrance of hot air into cylinders where it could set fire to the heated sulphur.

Wiring Concrete Wall for Training Morello Cherries: *J. S.* The oak posts should be let into the ground 2 feet flush with the face of the wall and close up to it at each end, the soil being rammed firmly about them. This done, mark the positions of the several wires on both posts at 6 inches apart, commencing 1 foot from the ground-line. Then drive the 3-inch galvanised wrought-iron driving-eyes quite 2 ins. into the posts at the points indicated thereon. Strain a line from end to end, beginning at the bottom eyes, and then mark off the positions of the several holdfasts at 5 feet apart on the wall, repeating the operation until the positions of the supports for the top wire are indicated. These positions should be arranged so that the holdfasts will alternate in each succeeding row. They should be driven quite 2 inches into the concrete wall, which, it will be found the galvanised wrought-iron driving-eyes will pierce under the influence of due force. This will dispose of the expense and labour involved in plugging the wall as you have suggested. No. 14 gauge galvanised wire will answer your purpose in every respect. Having cut the necessary series of wire into lengths of, say, 162 feet 6 inches each, secure the ends of the individual wires to the holdfasts provided for them in the post at, say, the west end, and then thread them through the series of "driving-eyes," and secure to "screw-tightener," which pass through eye of holdfast driven into the post at the east end of wall and tighten up to the necessary degree of tightness. Owing to the great number of small branches and shoots that has to be manipulated in the training of trees of the Morello Cherry, the wires should not be farther apart than 6 inches; but 9 inches would do for Pears, Plums, and Sweet Cherries. Fixed as indicated above the wires will be about three-quarters of an inch from the face of the wall. We advise that galvanised wires attached to walls having south, east, and west aspects should be painted white or stone colour, in case the action of the sun on the galvanised wire might prove injurious to the shoots of the trees attached thereto; but in your case, if the wall has a north aspect, it is immaterial whether you paint the wires or not. We should not expect trees of any kind to succeed well trained immediately upon or over galvanised iron roofs and fences.

Communications Received.—W. G. S.—W. Hackett.—Royal Dutch Bulb Growers' Soc.—W. H. W.—W. F.—H. W. W.—A. A. Wilding—A Beginner—G. J. Ingram—H. Boshier—W. C. L.—Royal Botanic Soc. (with thanks)—W. W. & Sons—J. D.—W. H. C.—J. M.—F. J.—F. J. C.—H. M.—G. Wythes—S. A.—H. Nehrling, Florida—R. N. (many thanks)—J. H.—W. A. C.—C. J.—Reader—F. M.—E. C. B.—Baron Schroeder.

(*For Markets and Weather, see pp.* xiv. *and* xv.)

THE
Gardeners' Chronicle
No. 943.—SATURDAY, Jan. 21, 1905.

CONTENTS.

Agave americana in flower 37
Alpine Garden—
Arabis Ferdinandi Coburgi 35
Apple census, the ... 44
Apple Lane's Prince Albert 41
Apple Wyken Pippin ... 45
Auricula, the 38
Benevolent Institution, Gardeners' Royal ... 42
Books, notices of—
Culture of Fruit Trees in Pots 45
Dictionnaire Iconographique des Orchidées 42
Floras of India ... 41
German Nurserymen's Address Book 42
Ratepayers' Guide ... 42
Cedrus Deodara var. alba spica 44
Chrysanthemum Mrs. Swinburne and its sport 44
Crane-fly, or Daddy Longlegs, the 34
Cryptomeria japonica, a large specimen of... 44
Currants, pear-shaped 36
Cypress-Pines of New South Wales 41
Fern fronds 33
Forestry 44
Fruit Committee, the Departmental... ... 42
Fruit-growers' Federation, the National ... 41
Gardeners' Association, the British 41
Gardening charities, donations to 42
Glass, toughened ... 42
Heath, a new hardy ... 40
Hollyhock culture ... 44
Kew notes 34
King's Walden, Bury. Hertfordshire ... 43
Kitchen garden crops, the rotation of ... 37
Law note 46
Lobelia Queen Victoria 46
Manures for Chrysanthemums 41
Market-gardeners' visit to France 41
Mites, injurious ... 40
Novelties of 1904 ... 36
Orange-trees, budding and grafting of ... 48
Orchid notes and gleanings 45
Plant notes 46
Pineapples, hybridising of 41
Plants causing skin irritation 41
Plants, new or noteworthy—
Scaphyglottis Cogniauxiana 33
Plum, the Myrobalan... 45
Potatos 44
Rainfall for 1904... ... 41
Riviera, frost at the ... 42
Rosa gigantea 42
Societies—
Gardeners' Debating 47
Société Française d'Horticulture de Londres 47
Royal Caledonian Horticultural ... 46
Transvaal plants ... 46
Vegetable forcing ... 36
Week's Work, the—
Flower garden, the... 39
Fruits under glass ... 39
Hardy fruit garden... 39
Kitchen garden, the. 39
Orchid-houses, the ... 39
Plants under glass ... 38
Young gardeners, the training of 44

ILLUSTRATIONS.

Agave americana flowering at Parkfield, Worcestershire 37
Crane-fly, or Daddy-Longlegs, the (5 illustrations) 34, 35
Gull, the Black-headed 35
King's Walden Bury, Herts, view of the residence and grounds at 43
View in the conservatory at Upton Grove, Tetbury (Supplementary Illustration).
Vilmorin, M. Philippe de, portrait of 47

FERN FRONDS.

ALTHOUGH Ferns must necessarily relinquish the foremost place as decorative plants in favour of flowering plants, owing to their general lack of brilliant colouring and their non-possession of any visible flowers at all, yet among foliage plants they cannot be surpassed. Their diversity of form and cutting is extraordinary, even in the specific forms, while when varieties come into question it seems infinite. Normally they vary in type from tiny, simple, undivided fronds, such as we see in our native Adder's-tongue or in Asplenium septentrionale, up to huge and much-divided ones, as in the majestic Tree-Ferns. Between these two extremes lie all grades of division on very similar lines, *i.e.*, we have a central stalk or stipes, from each side of which spring others, and from these still smaller ones up to the fourth or even fifth stage, while from all these spring a network of veins, between which lie the cellular tissues which complete the frond and render it a complicated, leafy expanse of smaller or greater area. This type of frond is the commonest, but there are numerous species in which the fronds are not divided at all, such as our common Hart's-tongue, the Bird's-nest Fern (Asplenium nidus avis), and numerous members of the Polypodium genus. In these the central rib has two more or less broad wings, one on each side, forming together a plain-edged frond of ribbon, spatulate or other form, and between the divided and undivided types there are various grades of partial division, coupled with a varietal tendency on the part of the undivided types to form projections at the edges, indicating an approach to the commoner type. Outside these, again, though only to a certain extent, since the ground-plan of ribs and sub-ribs is similar, we have the Ferns of the Maidenhair type, in which the minor divisions are quite distinctly stalked and independent of each other, and are also peculiarly shaped, usually wedge-fashion, imparting to the whole frond a widely different and lighter aspect than that of the rest of the divided section. Fern fronds, as a rule, differ from the foliage of flowering plants in springing individually and directly from the growing centre, and not, as in the latter, from already developed branches. This growing centre or caudex varies, however, greatly in type. In a very large number of species, we may point to our common Male Fern as the type; a circlet of fronds springs up around the centre on the principle of a shuttlecock, a fresh batch arising each season, when those of the previous season drop down and decay, leaving a small portion of their base as a contribution to the root-stock or caudex. It is in this way that a Tree-Fern forms its trunk, while many Ferns similarly planned work their way horizontally instead.

Another and a large section we may typify by the well-known Hare's-foot or Squirrel's-foot Ferns (Davallias). In these the horizontal root-stock lengthens much faster, with the result that the fronds rise one after the other and stand separately. Nevertheless, despite this difference they originate from the growing points on the same spiral plan as in Ferns generally, but assuming immediately an upright position at right angles to the root-stock. Our common Polypody forms a familiar type of this kind, as well as the Davallias, and these two above-described classes embrace the bulk of the Fern family.

Nature, however, is fertile in variants. Thus for instance, in the Ostrich-feather Fern (Struthiopteris) and in the Nephrolepis, we have Ferns of the true shuttlecock type, which develop underground runners of the creeping root-stock kind, which, after penetrating the soil for some distance, form a shuttlecock set of fronds from a terminal bud. In this particular connection it is worthy of remark that probably all the fronds of shuttlecock-forming Ferns have incipient buds near their bases, which are the rudiments of such runners, and in case of damage to the centre of growth, or even a check, they frequently assert themselves and form young plants, but closely adjacent and not at a distance. In this way an old plant is usually of a bush-like form, except in those which form trunks like the Tree-Ferns, in which this tendency appears to be suppressed. In the common Bracken we have a very marked example of a rapidly extending root-stock, with fronds at long distances. In this case the root-stock plunges deeply into the soil, even many feet, the fronds pushing their way to the surface all the same. The result is that the Fern spreads very quickly, and is very difficult to eradicate when once established. We have said that the frond differs from ordinary foliage in not originating from branch buds; but here, as usual, Nature makes exceptions to her general rules in the shape of bulbil-bearing fronds. There are many examples of this kind both specific and varietal. In these young plants are generated either from the plain surface of the fronds, as in Asplenium bulbiferum and Woodwardia orientalis, by buds in the axils of the subdivisions as in many varieties of Polystichum, in a berry-like form in Cystopteris bulbifera, by bulbils at the backs of the fronds in connection with the spore-heaps as specifically in Lastrea prolifera, and varietally in several Athyria, and by terminal buds at the end of lengthened fronds as in Adiantum lunulatum, Camptosorus rhizophyllus and others. In none of these cases, however, does the presence of bulbils enable the Fern to form an ascending bushy plant as in the case of trees; they all depend for permanent existence on some chance bringing them in contact with the soil or an equivalent. Finally, the great and main characteristic of the Fern-frond is its spore-bearing character, which is evidenced in many ways. These may appear in dot or line-like heaps arranged in various ways on the backs of the fronds, at the edges or elsewhere, in distinct masses at the frond tips as in Osmunda regalis, on separate divisions of the fronds as in Anemia and Adder's-tongue, or in undefined sheets as in the Platyceriums or Stag-horn Ferns. They may also be borne in little cups on the frond edges as in Davallia and Trichomanes. The microscopic spores are as a rule contained in tiny globular-stalked vessels called "sporangia," which burst open when ripe with considerable force, discharging the contained spores to a good distance; but in a few species they are contained in little cases of a different shape, "synangia,' escaping through openings in the top The mode in which these spores are borne is one of the most constant features even under great variation of specific and varietal form, and hence has been chosen by botanists to form the distinguishing marks between various genera. *Chas. T. Druery, F.L.S., V.M.H.*

NEW OR NOTEWORTHY PLANTS.

SCAPHYGLOTTIS COGNIAUXIANA, De Wildeman, nov. sp.*

This small species bloomed for the first time in the Brussels Botanic Garden at the beginning of December. It was received from M. Alf. Cogniaux, the well-known writer of the monograph of Brazilian Orchids in the *Flora*

---

* *Scaphyglottis Cogniauxiana*, De Wild., nov. sp.—Caules numerosi, plus minusve arcuati, ad nodos geniculati, flexuosi et interdum radicantes, virides vel fuscescentes, articulis inferne vaginatis, fusiformibus, 1,8–4 cm. longis et 3–5 mm. diam., apice mono vel diphyllis. Folia suberecta, linearia, basi breviter vaginantia, rigidiuscula, uninervia, ad apicem obtusissima et suboblique emarginata, 6—11·5 cm. longa et 2—3 mm. lata, nervo mediano supra canaliculato subtus non vel vix prominente. Flores 1—3, subsessiles, squamis longiusculis arcte vaginati, plus minusve patuli, viridiflavi, squamis 4—6 mm. longis. Ovarium lineare, rectum vel paulo arcuatum, 11 mm. circ. longum. Sepala tenuiter membranacea, leviter concava, trinervia, circ. 4 mm. longa, acuta, dorsale, 2 mm. latum, lateralia, 1·7 mm. lata; petala erecta, lineari-subspatulata, subacuta, uninervia, vix obliqua, 4 mm. longa et circ, 1 mm. lata. Labellum subtiliter 3—5-nervium, concavum 3—5 mm. long et 2·2 mm. latum, inferne angustatum, apice rotundatum, emarginatum, ad margines integerrimum. Columna erecta, recta vel vix incurva, apice dentata, 2 mm. circ. longa, et 1·8 circ. crassa. Brazil (*Import. Delaet*, 1904).

Brasiliensis, who himself received the plant from the Maison Delaet. We have pleasure in naming it after Professor Cogniaux, by the aid of whose monograph we were enabled to identify the plant. It should be classed, as our description will show, closely with S. prolifer (R. Br.), Cogniaux (cf., *Fl. Bras. Orchid.*, v., pp. 10—17), which, like S. Cogniauxiana, has the chin of the flowers but slightly marked, a characteristic which at once caused me to assign the plant to this genus. The difference between the two species is easily seen; in S. prolifer the leaves are about $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, and from 2·5 to 5 mm. (about $\frac{1}{10}$ to $\frac{1}{5}$ inch) wide, while in our plant they measure $2\frac{1}{2}$ to $4\frac{1}{4}$ inches long by 2 to 3 mm. ($\frac{1}{12}$ to $\frac{1}{8}$ inch) wide; the latter therefore are narrower and longer. In S. prolifer the sepals are pointed, the petals subspatulate, obtuse, the lip emarginated; in S. Cogniauxiana the sepals are pointed, the petals sub-acute, the lip bordered to the top. What still further differentiates the two plants is the length of the ovary, which in the older species, figured in 1824 by Lindley in the *Botanical Register* (t. 825), is very short, about 4 mm. (or $\frac{1}{6}$ inch) long, and with bracts surrounding it to the top; in the newer species the ovary is much longer than the bracts sheathing it, and may be $\frac{2}{5}$ inch (11 mm.) in length. *E. D. W.*

KEW NOTES.

Listrostachys hamata, *Rolfe*.—This is certainly one of the prettiest of the genus and is now flowering in the warm Orchid-house. It was sent to Kew in 1899 by Mrs. W. T. Martin, of Brixton, amongst a small miscellaneous collection of Orchids, which were gathered near Lagos, West Tropical Africa, and first flowered in December, 1900, proving to be a new species. It has flowered each year since that date.

The plant grows erect, having flat, leathery leaves 7 inches in length by $1\frac{1}{4}$ inch broad, deeply lobed at the apex. The plant now in flower has eight pairs of leaves and is carrying two racemes of flowers 4 inches in length, and each having seven large, white, vanilla-scented flowers. There is no distinct shaped lip, as is generally the case in this genus; the form of the flower is somewhat similar to that of a Hyacinth, with slender segments. The sepals are rather larger than the petals; they are $1\frac{1}{4}$ inch long, linear-acuminate, and curved backwards for half their length. The spur is nearly 2 inches long, light-green in colour, and has the remarkable character of being distinctly hooked at the tip; the ovary is triangular in shape and $1\frac{1}{2}$ inch long. At the base of each flower is a large, dark-brown, foliaceous bract. L. hamata succeeds well under such conditions as are generally afforded Aërides, Angræcums, &c.

Oncidium porrigens, *Rchb.*

This is an old species that was introduced by Messrs. Low & Co. from North Grenada, and was described by Reichenbach in the *Gardeners Chronicle* in 1868, p. 125, but it is very seldom seen in cultivation. The following is Reichenbach's description :—"This is a species of no other than botanical merit; both sepals and petals are horse-chestnut-brown, with honey-coloured ends; the lip is cinnamon [coloured], bearing an orange-coloured callosity, with some deeper spots." Notwithstanding this description, it is a species that is worth growing in a collection of Orchids. The Kew plant was obtained under the name of O. trulla, with which it is closely related. It is a large-growing species, with deep-green flask-shaped pseudo-bulbs 5 inches in length, each growth having usually about eight large arching leaves, the longest of which is 2 feet, and 2 inches in width. The plant now in flower has two branched spikes, each 5 feet in length, and consisting of about twelve spikelets having numerous flowers, the diameter of which is rather less than 1 inch. *W. H.*

SOME NEW FACTS CONCERNING THE ECONOMY OF THE CRANE FLY (TIPULA OLERACEA) AND ITS NATURAL ENEMIES.

Since the days when John Curtis published his *Farm Insects* in 1860 much has been written on the depredations of the Tipulæ or crane flies, but comparatively little that is new has since been added to the interesting account which "Ruricola" has given to us of these destructive pests. Four years ago there was an alarming plague of the larvæ on the golf-links in the marshes of the Dee, Cheshire. It was on this occasion that the writer had exceptional opportunities of observing the habits of these insects, and some facts then gleaned may at least prove of interest if not instructive. It should be clearly understood, however, that there are at least three species of crane flies which are destructive to crops and plants of various kinds, and also that the larvæ of all of them are popularly known as "leather-jackets." The following facts, however, concerns only one species, Tipula oleracea, one of the largest and most familiar of the family :—

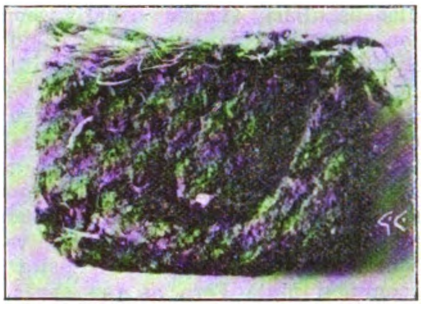


FIG. 16.—HORIZONTAL SECTION OF THE SUBTERRANEAN DWELLING OR BURROW OF THE LARVÆ ("LEATHER-JACKET") OF TIPULA OLERACEA. (*Actual size.*)

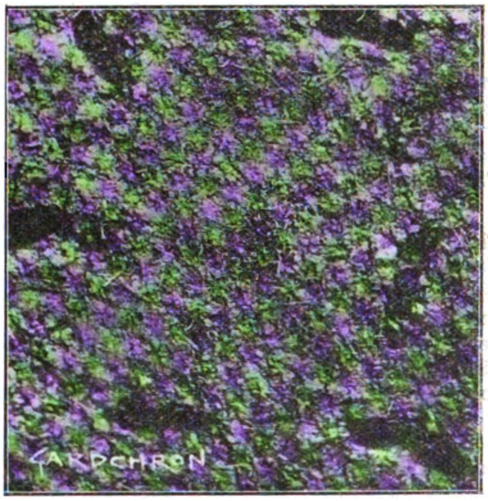


FIG. 17.—TRANSVERSE SECTION OF SIX BURROWS OF THE LARVÆ OF TIPULA OLERACEA ACROSS THE CURVED PORTION. (*Actual size.*)

The infected area under observation extended over several hundred acres, covering practically the whole of the grass land of the marshes, a great portion of which is perpetually grazed by sheep, the remainder being reserved for the use of the golf club. It was on the ground of the latter that the observations were chiefly made. The unmown grass on the links is generally short, and amongst it grows patches of White Clover, with here and there tufts of the Sea Pink (Armeria maritima), and other less common plants. Almost every square yard of grass was injured, and more especially in the shallow depressions and deeper hollows. In these the grass was so completely destroyed that there was not a green blade left, and the dead brown patches extended in every direction over the whole of the land. So effectually had the "leather-jackets" severed the crowns of the plants that one could with little difficulty roll back the turf into large masses, leaving the ground smooth and bare, exposing the surface-tracks of the larvæ. Strange to say, the White Clover and the Thrift were left intact and uninjured, and large patches and isolated plants of the former were growing amidst and through the dead grass, the larvæ at the same time were swarming on all sides with nothing apparently to eat but the dead grass which they had severed from its roots. On exposing the bare ground one also succeeded in occasionally disinterring a "leather-jacket," but such instances were rare. By carefully skimming off a thin layer of soil one immediately exposed to view innumerable burrows large enough to admit an ordinary-sized slate-pencil. In these the larvæ were discovered, and by making a vertical section of the burrows one also found that each larva had excavated for itself a separate J-shaped dwelling (fig. 16), into which it had retreated for the day, and where, for greater safety, it had gone as far as it could into the upturned portion, carefully blocking the entrance with *débris* and soil so as effectually to conceal it. From this subterranean retreat the larvæ were with diffi-

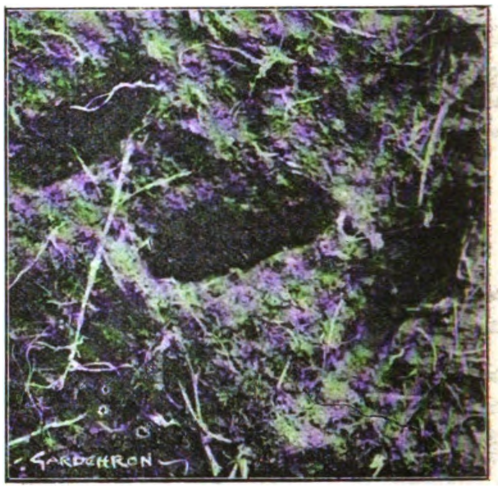


FIG. 18.—THREE BURROWS OF THE LARVÆ OF TIPULA OLERACEA EXCAVATED BY ROOKS. (*Actual size.*)

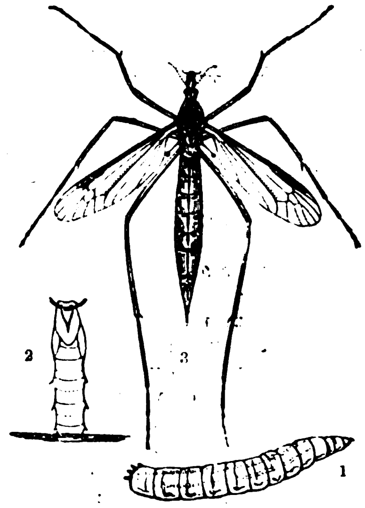


FIG. 19.—THE CRANE FLY OR DADDY-LONG-LEGS.
1, Grub; 2, the Pupa; 3, Mature Insect.

culty extracted except by digging them out, and many suffered themselves, as do worms, to be extracted piecemeal with a pair of small forceps rather than relinquish their hold. Indeed the resistance they offered when occupying the upturned portion of the burrow was extraordinary. As to their numbers, there was an average of ten larvæ to the square foot, or ninety to the square yard; in the badly infected spots there would be quite double that number. The larvæ which were kept under observation were found to leave their burrows at night, returning again to them during the day. Pupation took place throughout the month of August, the first two flies appearing in the breeding-cage on the 11th of the same month, and others continued to hatch until the end of September. In the infected area the crane flies were more abundant in the early part of September, when they occurred in myriads; and on one occasion, during a prevailing north-west wind, millions of them were swept together into the sheltered corners of the golf pavilion.

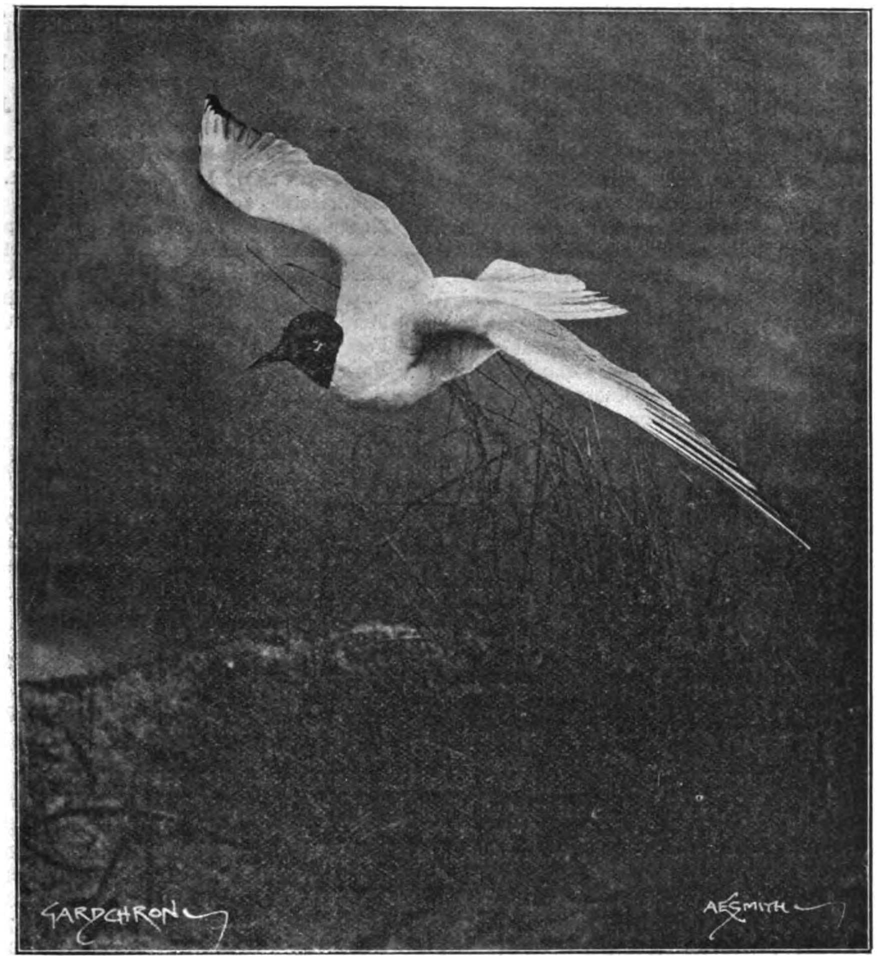


FIG. 20.—BLACKHEAD GULL (LARUS RIDIBUNDUS), A NATURAL ENEMY OF THE CRANE FLY.
From a specimen in the Grosvenor Museum, Chester, mounted by the Author.

NATURAL ENEMIES.

During the month of June, when the "leather-jackets" or larvæ were devastating the grass, the rooks flocked to the infected area, and devoured the grubs in great numbers. Their feeding time was during the early hours of the morning, and again during the evening, after the golfers had gone away. Small parties were also to be seen at intervals throughout the day. The method adopted by the rooks for extracting the larvæ was simple, and at the same time extremely interesting. As already stated, each larva retreated during the daytime into the upturned portion of its burrow (fig. 17), where it was perfectly concealed and apparently safe, there being but one exit, and that invariably blocked at the entrance; then over all was the additional mat-like surface of grass. Apart from the dead grass there was therefore no external evidence of the existence of the larvæ. The rook has first of all to find out the larval retreat, and this it apparently does by probing with its beak and pulling away tufts of grass. Having located a burrow, the bird then ascertains the direction in which it is curved, finally excavating the overlying soil (fig. 18) exactly in the right place, thereby exposing the curved end of the burrow and its helpless tenant. It would be impossible to give anything like an approximate estimate of the number of grubs that were thus taken by the rooks; but it is quite safe to compute the number at 25 per cent.—a very high percentage considering the extent of the infected area. But the rooks were attracted to this rich feeding-ground in enormous numbers, and by their unremitting search for the grubs did more to reduce the devastating army than could any human agency. It was during the months of June and July that the rooks made their attack, and when the larvæ had pupated, and the flies began to appear, these birds left the district for other fields. Then, when the crane-flies appeared, they in turn were attacked by flocks of black-headed gulls (Larus ridibundus) (fig. 20), and to such an extent did they wage war against the insects that their "pellets" or "castings" (fig. 21) were left scattered over the land in hundreds, looking like little bundles of tightly-packed dead grass. On soaking one of the "pellets" in water it was found to contain the remains of about 400 crane flies and 1,600 of their eggs; the latter had evidently been taken while yet in the body of the parent. Each pellet probably represented a single meal, and there can be but little doubt that each bird would make at least two meals daily of these insects. If this were so a single gull would be accountable for the enormous number of 4,000 crane flies and their eggs per day, making an aggregate of 28,000 per week. As the gulls flocked together in hundreds, the number of insects which they devoured may better be imagined than described. Fortunately the birds were and are still strictly protected.

So far the evidence relating to the nature of the natural enemies of the crane flies and their larvæ has been gleaned from a comparatively small area, and that under very unusual circumstances. From other localities the writer has also found numbers of leather-jackets in the stomachs of both the curlew and the green plover or lapwing, and he has also seen late broods of the young of the yellow-hammer and the common wren fed extensively on the parent flies (Tipula sp.) (fig. 19). Thus we see that the Tipulæ form an important item in the dietary of several species of birds (one could add others from various authorities), and that these birds contribute in no small degree to check the increase and the ravages of these pests of the farm and garden. *R. N.*

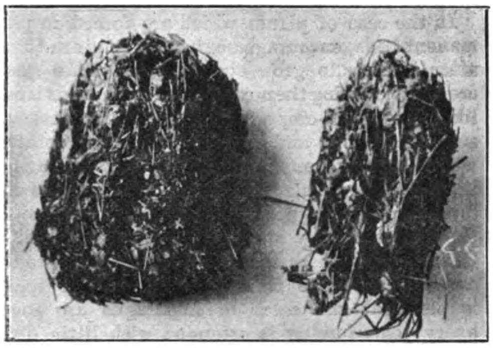


FIG. 21.—TWO "PELLETS" OR CASTINGS OF THE BLACK HEADED GULL, COMPOSED ENTIRELY OF THE REMAINS OF CRANE FLIES (TIPULA OLERACEA). (*Actual size.*)

ALPINE GARDEN.

ARABIS FERDINANDI-COBURGI.

THERE are several members of the genus Arabis which have quite a distinct character from the well-known A. alpina and A. albida, which are so generally met with in gardens. Some are of the closest and densest habit, and form ideal plants, so far as regards their habit, for the collection of choice rock plants. Unfortunately, most of them are disappointing as regards their flowers, which compare very unfavourably with those of the more popular Arabises. One of these is the new Arabis Ferdinandi-Coburgi, introduced last spring. It is a beautiful little plant, with small rosettes of greyish leaves, green, however, in winter. It is only some quarter of an inch above the soil, and is almost moss-like in its appearance. As a flowering plant it is, however, rather disappointing, seeing that its blooms are not only small, but are of a yellowish-white—one of those nondescript hues which are disappointing. Yet the appearance of this Arabis when out of bloom will make it welcome to many lovers of alpine plants. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

SOME NOTES ON FORCING VEGETABLES.

ASPARAGUS claims the first place, and may be obtained daily from now until April, though the return is not so good as that from Seakale. But it is only fair to add that a great improvement has taken place in the culture of roots expressly for forcing purposes, and when the length of time necessary to grow these roots is taken into account the cost is not excessive, and they make the work of forcing less difficult than it was formerly. The value of permanent beds, however, for furnishing a supply from February till April is very great. We find these beds a splendid addition, and they last for many years, whereas lifted roots once forced are valueless, and the work of years of preparation is lost in a single season. I did not intend to describe the best methods of forcing, for I have done so many times in the *Gardeners' Chronicle*, but will merely add that we use fresh leaves and manures largely. By using hot-water-pipes and sunk brick pits, as well as the manure and leaves, forcing is done with ease, and splendid results are secured. I am surprised that this system is not more practised in large gardens.

In the case of plants which are forced in permanent beds, encouragement must be given them after forcing to grow strongly and make good crowns for forcing the next season. Asparagus is not like many other crops, for if it be given occasional supplies of food and moisture excellent returns will follow for many years. For supplies earlier in the season than February I do not advise forcing plants in permanent beds, as the roots then more readily start into growth, whilst the lifting that others may be subjected to would cause a check to their growth. When space is plentiful and seeds of Asparagus are sown every year, forcing is attended with little difficulty, but my experience goes to show that in many gardens space and labour to grow the plants are none too abundant, and for forcing after January permanent beds are a great advantage. In our own case we force lifted roots from early December to the end of January, then rely upon the permanent beds till the end of April, and beds in the open for the latest period, which often lasts for four months, as we find that even in July there is a brisk demand for this vegetable. It will thus be seen that Asparagus may be had during eight months of the year.

SEAKALE

is a popular vegetable at this season, and during the last quarter of a century great progress has been made in the culture of this vegetable, not only by the trade but in private gardens, as very large quantities are now grown, and supplies may be had from November until April. I am not sure that Seakale from roots lifted and forced in Mushroom-houses or any dark warm place can compare as regards flavour with the produce from roots forced under pots in their growing quarters. The large market grower, however, who forces largely and in a different way, gets excellent produce; and the forcing is done upon the old system, except that the roots are placed together in bulk. Seakale-roots made suitable by special preparation for forcing may be purchased at such a reasonable price that there should be no difficulty in obtaining a plentiful supply at this season. Attention may also be called to the value of this plant, when merely given protection, for the obtaining of a late supply. If the plants be covered over now with a good body of soil, they will yield splendid produce in March and April, when good vegetables are scarce. It is surprising how much better in quality all vegetables are when they have not been forced severely. Even in forcing it is necessary to make the treatment as natural as possible, and the employment of too much heat results in poor flavour. It is not really necessary to remove Seakale-roots indoors, for if a certain number of roots, according to the requirement of the house, is placed in trenches and covered with warm litter, which can be added to as required, a full supply may be obtained, and the produce will be superior to that grown in a heated house. In any case a regular supply should be maintained by commencing to force fresh roots every three weeks, either in the Mushroom-house, in frames covered with litter, or in their permanent positions in the beds. *G. Wythes, Syon House Gardens, Brentford.*

(To be continued.)

FRUIT REGISTER.

PEAR-SHAPED CURRANTS.

IN the *Pomologische Monatshefte*, No. 10, 1904, Mr. Maurer, of Jena, gives a description with illustrations of various pear-shaped Currants, both red and white. Up to the present time but four varieties are known of Currants that produce berries of this shape. One of the white and one of the red-fruited Currants were raised by Mr. Goegginger, a nurseryman of Riga, and the two remaining sorts came from Switzerland. Mr. Maurer has subjected these to a series of carefully made experiments, with the result that Mr. Goegginger's pear-shaped Red Currant is found to be well worthy of note as a dessert fruit and for preserving. It is extremely decorative for table use, and either as a bush or a standard it is suitable for planting in the pleasure-garden, but it is not of sufficiently vigorous growth to render it suitable for market purposes. The remaining three Currants having pear-shaped fruits are of pomological interest only.

As a result of experiments extending over several years, bearing upon the number of seeds in each berry, and the weight of seed contained in each berry, Mr. Maurer states that in those seasons in which the crop was most abundant, each berry contained more seeds than in years in which the crop was poorer in quality. Also that in those crops that were better in quality, each individual seed attained also a greater weight than in years when the fruit was less abundant.

NOVELTIES OF 1904.

(Concluded from p. 30.)

THE following new and rare plants and fruits, &c., of special interest have been illustrated in the *Gardeners' Chronicle* in 1904:—

Aloe natalensis, November 19, p. 347.
Aloe striata, December 17, p. 423.
Aloe supralævis, December 31, p. 458.
Aloe Baumii, April 9, p. 226.
Apple "Rev. W. Wilks," October 8, p. 253.
Apple (six best cooking), Oct. 29, pp. 299—303.
Apple (six best dessert), Nov. 5, pp. 314—319.
Apple (Crab) Veitch's Scarlet, October 8, p. 252.
Apple (Crab) Frettingham's Victoria, October 8, p. 252.
Amaryllis Snowdon (Hippeastrum), April 30, p. 283.
Amaryllis (Mr. Chamberlain's), Dec. 3, p. 391.
Asparagus medeoloides myrtifolia, November 5, p. 323.
Astilbe (rose-coloured), August 27, p. 143.
Bambusa palmata, Supp., April 30.
Begonia Avalanche. June 18, p. 396.
Bougainvillea Maud Chettleburgh, Supp., November 12.
Bougainvillea spectabilis Cannell's variety, December 3, p. 383.
Bowkeria triphylla, Supp., December 10.
Begonia Margaret Gwillim, August 6, p. 90.
Begonia (Webb's Double), September 3, p. 167.
Calceolaria (Webb's Wordsley), June 11, p. 379.
Carnation Lady Carrington, August 6, p. 94.
Carnation Glow-worm, August 6, p. 95.
Carnation King Solomon, July 30, p. 78.
Carnation Lady Linlithgow, July 30, p. 79.
Caralluma crenulata, January 9, p. 19.
Caralluma Munbyana, February 6, p. 84.
Chrysanthemum marginatum, January 23, p. 51.
Chrysanthemum (Jap.) Lady Cranston, Supp., January 23.
Cheiranthus × kewensis, February 20, p. 123.
Castanopsis chrysophylla, August 27, p. 145.
Citrus "Plata Orange," February 6, p. 93.
Clerodendron myrmecophilum, April 9, p. 229.
Clematis × Mantua hybrid, June 25, p. 403.
Corydalis angustifolia, May 14, p. 307.
Corydalis nobilis, May 14, p, 308.
Corydalis thalictrifolia, May 14, p. 309.
Corydalis Wilsoni, May 14, p. 306.
Cotoneaster angustifolia, December 24, p. 441.
Cytisus purpureus, September 24, p. 217.
Crambe orientalis, September 24, p. 221.
Dahlia (Cactus) J. B. Riding, Sept. 24, p. 227.
Deutzia scabra, October 1, p. 244.
Dianthus × Lady Dixon (Douglas), June 11, p. 378.
Echinocactus Wislizeni, March 19, p. 181.
Echinocactus Emoryi, March 19, p. 181.
Echinocereus acifer, October 1, p. 245.
Encephalartos Laurentianus, June 11, p. 370.
Encephalartos Lemarinelianus, June 11, p. 371.
Elæocarpus cyaneus, Supp., October 15.
Eupatorium petiolare (Cannell), Mar. 12, p. 163.
Fendlera rupicola, December 10, p. 410.
Forsythia europæa, August 20, p. 123.
Furcræa longæva, July 16, p. 45.
Garrya Fremonti, January 16, p. 44.
Gladiolus primulinus, September 10, p. 191.
Gloriosa grandiflora (Leopoldi), Supp., Sept. 10.
Gourds (Pergola at Mrs. Brightwen's), September 10, p. 193.
Glaucium flavum tricolor, August 13, p. 115.
Grape Cornichon Blanc, October 8, p. 251.
Helicophyllum Alberti, Supp., October 29.
Huernia oculata, August 20, p. 132.
Iris Artemis, May 28, p. 349.
Iris Charon, May 28, p. 348.
Iris tectorum in Japan, June 4, pp. 354—5.
Iris Saarii, August 27, p. 147.
Iris Sofrana magnifica, September 3, pp. 162—3.
Iris gracilipes, July 2, p. 1.
Iris Sprengeri, July 23, p. 50.
Iris Haynei, Supp., April 23.
Iris Haussknechtii, April 16, p. 251.
Jacaranda mimosæfolia, Supp., September 24.
Lobelia nicotianæfolia, March 26, p. 195.
Laurelia aromatica, December 10, p. 401.
Lathræa clandestina, May 7, pp. 292—3.
Lonicera tragophylla, Supp., August 27.
Littonia modesta, September 10, p. 183.
Lilium philippinense, September 17, p. 211.
Lonicera pileata, April 16, p. 243.
Lupinus polyphyllus roseus, July 16, p. 35.
Lysichitum camtschatcense, May 21, pp. 322—3.
Manettia inflata, December 3, p. 384.
Meconopsis integrifolia, Supp., October 1, and p. 240.
Meconopsis punicea, October 22, p. 289.
Moschosma riparium, January 9, p. 31.
Narcissus Fürstin Marie Oetingen, May 14, p. 314.
Narcissus Great Warley, April 30, p. 275.
Narcissus White Ensign, May 14, p. 315.
Nerine Bowdeni, November 26, p. 365.
Neviusia alabamensis, April 9, p. 229.
Pinus leiophylla, September 3, p. 175.
Pears, four good late, Dec. 24, pp. 437, 438, 439.
Pears, six good, October 8.
Potato King Edward VII., October 15, p. 276.
Potato Maxim, October 22, p. 291.
Potato Peckover, October 22, p. 290.
Potato Northern Star, October 15, p. 269.
Potato Sir John Llewelyn, October 15, p. 277.
Platycerium angolense, February 27, p. 140.
Primula Forbesi, January 9, p. 20.

Primula obconica (white), April 16, p. 245.
Pomaderris vacciniifolia, May 21, p. 339.
Rose La France, July 9, p. 19.
Rose Ulrich Brunner, July 9, p. 18.
Rose Blairii No. 2, Supplement, July 9.
Roses (Rambler), July 9, pp. 28-9.
Saxifraga lilacina, May 7, p. 290.
Scutellaria Ventenatii, Supplement, June 11.
Sophora viciifolia, July 2, p. 3.
Strawberry The Alake, July 23, p. 61.
Strawberries Laxton's Reward, Royal Sovereign, and Trafalgar, July 9, pp. 20-1.
Strelitzia Augusta, June 25, p. 402.
Stapelia Pillansii, April 16, p. 242.
Sinningia Regina, September 17, p. 201.
Statice arborescens, December 17, p. 419.
Tulipa Tubergeniana, Supplement, June 4.
Trachycarpus excelsus, Supplement, May 14.
Tricyrtis hirta, January 9, p. 18.
Trochetia Blackburniana, Supp., August 13.
Vallota purpurea alba, August 27, p. 150.
Verbascum simplex, July 2, p. 2. *J. O'B.*

AGAVE AMERICANA.

Few plants have a more stately appearance than the so-called American Aloe. Our illustration (fig. 22) exemplifies this statement. It was taken from a photograph kindly sent us by Mrs. C. W. Lea, Parkfield, Hallow, near Worcester. In the early part of November the flower-buds were generally expanded, showing globular masses of yellow stamens. The flower-spike was nearly 20 feet in height, and was produced between the end of June and the end of October. The plant is more than fifty years old. Of course the species is not an Aloe, and the statement that a plant only blooms when it has attained an age of 100 years is a perversion of the truth. The Agaves are mostly natives of Mexico and dry countries, but they have been largely introduced along the Riviera, where their majestic appearance adds greatly to the picturesqueness of the scenery.

VEGETABLES.

ROTATION OF KITCHEN GARDEN CROPS.

This is a subject of considerable importance in vegetable cultivation, but one which I am afraid does not in practice receive the attention which its importance deserves. It is from lessons learned in the school of long experience and of practical work that the following suggestions as to the rotation of crops are based.

The subject of rotation is rather difficult of approach. It may be likened to an endless chain, or a circle that is for ever revolving; there is really no end or beginning to the work, for which one must be always either preparing or planting. It will be convenient to take as the first of our crops Peas, early, mid-season and late.

It goes without saying that for the first early crop of Peas the position selected must be a warm one, such as a south border protected by a wall, hedge, or some other shelter. Presuming that the land has been well prepared and the varieties grown are the earliest to bear, this crop should be over early in June. The next crop to occupy the ground should be Cos Lettuce, planted in rows 12 inches apart and at the same distance between the plants in the rows. A light dressing of well-decayed manure should be applied to the land previous to planting this crop. The Lettuce should be over towards the end of July or early in August, when the land should be dug, without manuring, and Early Horn Carrots sown in rows 10 inches apart. This crop will occupy the ground during the whole of the winter months, giving a supply of excellent Carrots until others are produced the following spring.

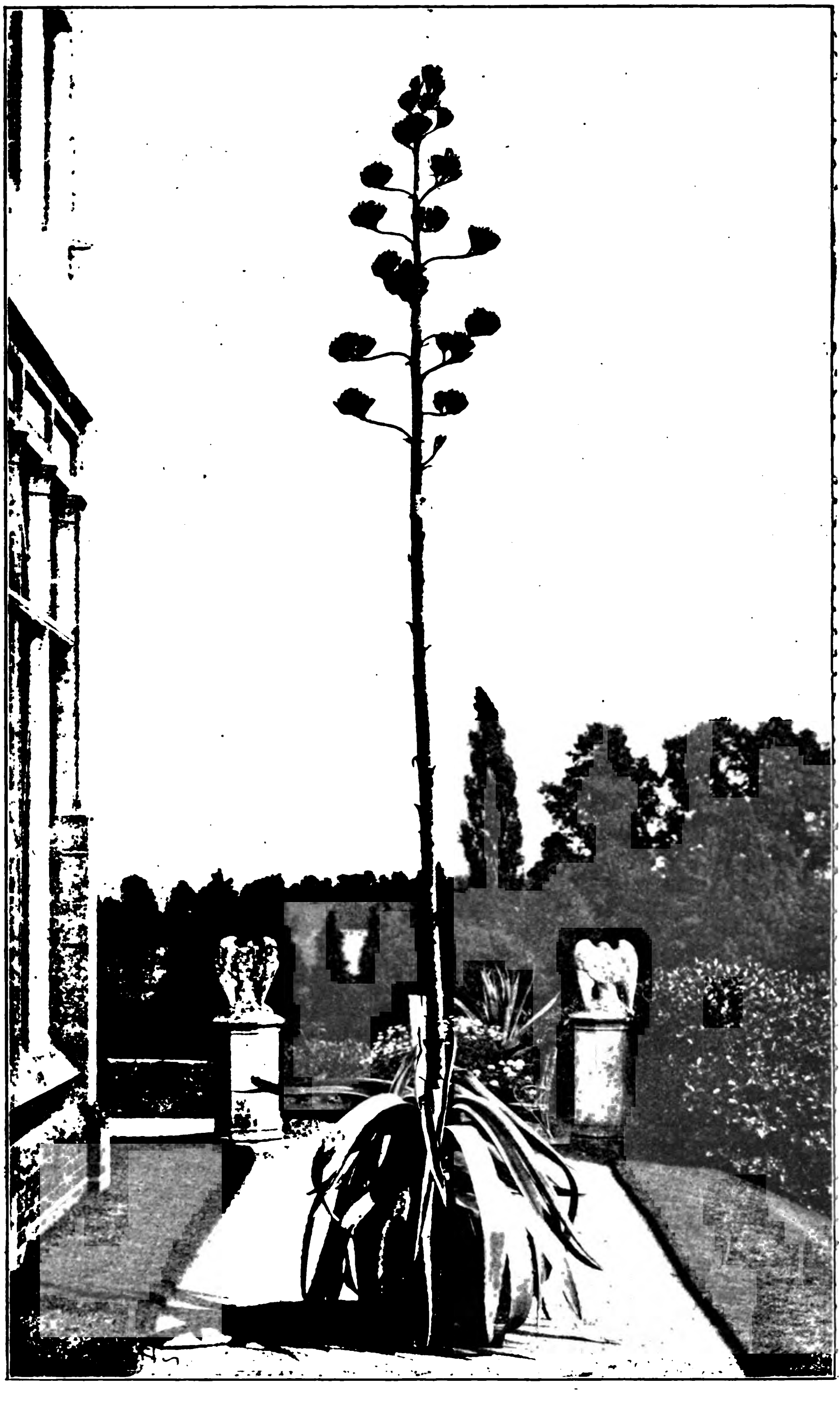


Fig. 22.—Flowering of Agave Americana at Parkfield, Worcestershire.

Successional Crops of Peas.

It is a principle with all good gardeners to manure heavily and trench deeply annually some portion of their garden, so that after a few years the whole of the soil is subjected to the beneficial influence of this treatment. The portion of the garden receiving this culture during the current year cannot be devoted to a better purpose than the growing of successional crops of Peas, the last of which will be out of the ground late in October or early in November. The earliest of the midseason Peas will be harvested early in autumn, and the best crop I know of to follow the Peas is autumn and winter Lettuce. For this crop it is an advantage to divide the land into "breaks" 7 feet in width, with an 18-inch alley between them. The soil of the alley should be added to the surface of the bed, in order to slightly raise it above the surrounding level; by this means the soil will be kept much drier during the wet weather of autumn and winter. Cauliflowers in successional batches should succeed the Lettuce the following spring, the land in the meantime having received a moderate dressing of manure.

Early Potatos.

One of the most important early crops the kitchen gardener is responsible for is that of early

Potatos, and, provided the land has been well prepared beforehand by liberal manuring and cultivation, no crop yields a more satisfactory return than this. The position allotted to the Potatos should be as favourable as that recommended for early Peas. The best crop I have found to follow early Potatos is that of the London Colewort. These, if planted in August, will make beautiful, compact heads before winter, and be as much appreciated as any crop at that season. They should be planted 10 inches apart each way, and the ground should receive a light dressing of manure before they are planted. For successional crops of Potatos the land that was under Cauliflowers the previous season should be utilised; if possible, it should be trenched and heavily manured during the winter. *O. Thomas.*

(To be continued.)

FLORISTS' FLOWERS.

THE AURICULA.

With the advent of the new year Auricula fanciers begin to get interested in their favourites if the weather is favourable. If frosts set in the plants may be well covered up with double mats hanging over the back and front of the frames. If the plants are frozen they require no air nor attention of any kind; they are at rest, let them rest; they are as safe in the frames as under a thick mantle of snow in their native Alps. We do not always have frost in January in this uncertain climate, and if the weather is mild surface dressing may be seen to, but after the plants have been surface-dressed, I do not care to allow them to be frozen hard. I place them in the Auricula-house, where the temperature is not allowed to fall more than 2° or 3° below the freezing-point. As soon as they are surfaced-dressed and frost is practically excluded growth commences, and the centre gradually unfolds, the heavily mealed varieties, pure white; the green-leaved varieties of richest emerald colour, with many shades of grey between the green and densest white. One remark I may make, and that is, that the green-edged Auriculas always have green foliage.

Top-dressing.

This operation is performed for the purpose of renewing the soil, but to do this we need not dig half-way down the sides of the flower-pots, smashing and bruising the best roots. The Auricula plants are on the bench ready to be attended to, and even without turning the plants out of the pots, the practised eye of the florist can tell if the drainage is free. In many instances it is choked up, sometimes owing to worms or inefficient crocking. In that case the plant should be turned out and all the old drainage material cleared away. Clean, well-drained pots should be made ready, with some fibrous loam over the drainage. Clear a little of the soil from the base of the ball of roots and some from the top; this can be done without bruising any of the roots. The plants should then be returned to the clean pot, the base of the ball resting on the fibrous loam. Space enough should be left at the surface to allow of the top-dressing, which should be of good loam and decayed stable-manure in equal portions. Press the soil down firmly. This treatment in January is far better than the usual practice of top-dressing. During this operation in January and February all offsets having any roots attached to them should be removed and planted in small flower-pots, using sandy soil.

Any nice sturdy plants in small flower-pots, that show by the appearance of the crowns that they may produce good flower-trusses, should be repotted. There is considerable difference of opinion as to the best material to use for potting Auriculas. The best amateur grower in the South, Mr. T. E. Henwood, has come to the conclusion that good fibrous loam with nothing added is the best. The Rev. Francis D. Horner, the best of the Northern growers, recommended "one-part unctuous loam, one-part leaf-mould, and two-parts decayed sheep or cow manure mellowed under shelter." At the time this was written, Mr. Horner was growing Auriculas which excited the wonder of the best fanciers. I believe he does not now use quite such a rich compost. For my own part I have been most successful when I have used the following:—Three parts good fibrous decayed loam, one part leaf-mould, and one part decayed stable manure.

At the time of repotting or surface-dressing, see that all examples of the Auricula-aphis (Trama Auriculæ) are removed from the roots, and especially any that may be clustering around the necks of the plants. This pest favours any open parts where there is fibre, and especially over the drainage; and dryness suits our very troublesome insect better than wet. It is very quiet in winter, but increases at an alarming rate in hot weather. The fanciers were dreadfully frightened when it first made its appearance. I know one at least who thought his plants were ruined. My good friend, Mr. Ben Simonite, first sent it to me, and not knowing it was on the plants, it made a good start before I found it out. After thirty years' experience we now find that if it is cleared away from the roots at the annual repotting it does no harm to the Auricula. The ordinary fumigations of tobacco-paper do not trouble it much, although they may be strong enough to kill green-fly; but if any of it is above the surface of the ground Richards' XL-All vaporiser will kill it after two or three fumigations. It is certainly very tenacious of life, protected as it is to a great extent by its fluffy white covering which throws off water and doubtless helps to protect it from strong fumigations that kill green-fly instantly.

We may have a fine display of Auriculas from early in April until the end of May by a little attention to placing those that flower early in the warmest part of the Auricula-house, and the later-flowering varieties in frames on the north side of a dwelling-house. There is a saying amongst the Northern growers "that the Auricula in May has had its day." Probably the third week in April is the time to see the bloom at its highest point of perfection. The exhibition of the Southern section of the National Auricula Society will be held on April 25 next in the new Hall of the Royal Horticultural Society in Vincent Square, and this will be followed by another Auricula show a few days later at Birmingham, and another later still in Manchester. Many gardeners look down upon the Auricula as a flower not worth their attention. We need not travel far to find a reason for this. Gardeners require plants that will produce flowers to cut for room decoration, and Auriculas are not well adapted for this purpose; moreover, they require attention.

It was well said by the late Dean Hole that he who would grow Roses well must have Roses in his heart; but this remark applies even more to the Auricula. Rose shows are a modern invention, whereas Auricula shows have been held without a break for more than a hundred years—how much longer I am unable to say. The present-day amateurs are still continuing the work handed down to them by the florists of long ago, and under more favonrable conditions. In these days the exhibitions are held under the auspices of the Royal Horticultural Society of England. In the old days the amateurs carried their flowers to a room set apart in some convenient public-house, and the merits of the flowers were discussed and the prizes awarded, while the members smoked their long clay pipes and drank the home-brewed ale. It was not a good setting for the lovely flower, and we are thankful that it can now be admired in better surroundings, and in the presence of a different, if not a more appreciative, company. In the *Florists', Fruitists', and Garden Miscellany* for 1851 there is a wood-cut of one of these meetings, entitled, "Meeting of Florists in the Olden Time." The design is worthy of George Cruickshank. The florists are all elderly men dressed in the costume of the seventeenth century. There is the old fireplace, and the massive table set out with Auriculas. The President and three other members, smoking their long clay pipes, are still discussing the points of the flowers; but the waiter is bringing in a large bowl of steaming punch, and the decision cannot be long delayed. It is a picture of old times well worth study. "Old times are changed, old manners gone"; but the Auricula is yet with us, and we hope to make a great show in the new Hall on April 25, 1905. *Jas. Douglas.*

The Week's Work.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Withes, Esq., Copped Hall, Epping, Essex.

Winter-flowering Carnations.—If strong cuttings of the varieties America and Mrs. S. J. Brooks are procurable, a batch propagated now will make strong plants for flowering in autumn and winter. I do not advocate the general propagation of Carnations until somewhat later for two reasons. First, because the stock plants at this time of the year are usually very drawn and weakly, and secondly, many of the varieties do not flower freely or satisfactorily until well into the new year. Of several varieties grown here the two named above are always good and reliable, the distinct shades of colour adding greatly to their usefulness as companions to each other. Let the cuttings be inserted in thumb-pots only, which should be well drained previously, and filled firmly with finely-sifted old potting soil, covering this with a layer of silver sand. Insert three cuttings in each pot, care being taken that the heel of the cutting rests firmly at the bottom of the hole made by a small dibber. The cuttings or slips should be carefully detached from the stock plants by the thumb and finger, and should require no trimming with a knife. If the cuttings are placed in a stove propagating case, a large percentage generally damp off. I have been very successful with a temporary arrangement as follows:—Place hand-frames on the water-pipes in a closed vinery or Peach-house where a minimum temperature of 55° is maintained. Put in this frame, to the depth of 3 inches, some Cocoanut-fibre or finely-sifted ashes, and into this material plunge the pots containing the cuttings. One watering should be sufficient until the cuttings are rooted. Cover the frame with a sheet of glass, and remove the glass each morning for a little while, to allow the moisture to escape. The heat from the pipes necessary to maintain the temperature of the house will afford the required bottom-heat and a suitable temperature above.

Propagating.—If cocoa-nut fibre is used for propagating purposes it is advisable to replace the old fibre each year with fresh material before the season's work commences. Where, from motives of economy or otherwise, this cannot be done, the old fibre should be heated in an old pail or some other vessel over a fire in order to thoroughly sterilise it and destroy any insects that may be present. Thoroughly cleanse the propagating-frames with a mixture of paraffin and soapsuds, afterwards allowing them to remain in the open for a few days.

Cyclamen. — Seedlings from seed sown last August that are not already potted off should be shifted without delay into well-cleansed and well-drained thumb-pots. A suitable soil will be loam and leaf-mould in equal parts, with a liberal proportion of silver sand, the whole broken small and passed through a fine sieve. Stand the pots on a shelf in a warm, moist atmosphere, as near to the light as possible. An occasional syringing with clear water will be beneficial to the plants.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Melons.—Melon fruits are often more appreciated at the end of April or beginning of May than later, because other soft fruits are less plentiful. Sow seeds of some strong-growing and quick-maturing variety, remembering that varieties having scarlet flesh generally ripen earliest. Instead of sowing the seeds and plunging the pots in a bottom-heat of 80°, I prefer to sow them direct into 12-inch pots, or on the bed. These two latter methods I have found produce the strongest plants. The beds should be made close to the glass, and be composed of good loam of medium texture, wood-ashes, and lime-rubble, which should be made firm. As Melon seeds are plentiful, two or three seeds may be sown in each pot, and the weakest plants removed afterwards. A steady bottom-heat of about 80°, and a temperature at night of 65° to 68°, with a moist atmosphere during day, will be suitable.

Winter Cucumbers.—A good supply of fruit is easily secured throughout December, but much skill and attention will be required to maintain a constant supply of these fruits during the first three months of the year. Plants that have been in bearing for some time should be top-dressed, whenever the roots appear on the surface, with a compost of rich, light loam, to which a small quantity of Thomson's Vine Manure has been added. Occasional waterings should also be given of clear, weak liquid-manure, at the same temperature as the soil in which the plants are growing. The plants should be trained thinly, cropped lightly, and encouraged to make free growth. In order to maintain a succession of fruits, seeds should be sown immediately in 3-inch pots; these should be plunged in a bottom-heat of 80°, and when the seedlings are well through the soil place them near to the glass in a temperature of 68°. Prepare for the reception of these plants by thoroughly cleansing the structure intended for them, and by the preparation of fresh beds intended for their planting. These beds should be as near to the glass as possible, and should be constructed of a mixture of two parts leaves to one of stable-litter on which is placed a moderate quantity of rich soil at intervals of about 4 feet. If young plants are not in readiness for planting, sow a couple of seeds in each mound. These will germinate quickly and grow strongly. Maintain a bottom heat of 80° with a night temperature of 68°. A generally humid atmosphere should be maintained by frequently damping the paths and beds.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Hot Beds.—Where plenty of leaves and stable litter is obtainable, six parts of the former to one of the latter will be found suitable and sufficient to hold the leaves together. The material should be well mixed together and afterwards made firm. The bed should be from 4 to 5 feet in depth, which will be sufficient to produce abundance of heat for a long period. It is much the best plan to sink the beds by excavating the soil to a suitable depth and filling in with the heating material, because if the beds are exposed to cold winds through being raised much of the heat is wasted. When the portable frames are in position it will depend upon the nature of the crops what soil medium should be used; for such plants as Asparagus and Seakale just sufficient leaf-soil for plunging will be all that is necessary. Old potting soil, well screened, will be found admirable for carrots of the stump-rooted varieties, such as Sutton's Inimitable or Persian Horn; while for Potatos a compost of half loam and half leaf-soil, previously prepared, and fairly rough in texture, will be excellent for growing such varieties as Early Improved Ashleaf (unsurpassed for quality) and Sharpe's Victor. Strict attention must be paid to protecting the frames by suitable coverings, according to the state of the weather and degree of tenderness of crop. Trays of seed Potatos intended for successional crops should be placed in newly-started Peach-houses or vineries, where they will commence to sprout.

Broad Beans.—Little difficulty should be experienced in obtaining an early supply of these vegetables if such varieties as Veitch's Improved Long Pod, Green Windsor, or Beck's Dwarf Green Gem, be given the same treatment as previously advised for early Peas. For forcing these vegetables under glass place four or five seeds in a 7-inch pot, while for early crops in the open sow in small pots or boxes, and place in cold frames for planting-out in March. We have just finished planting a breadth of the first-named variety on a south border in the open, the rows being 2 feet apart, and the seeds placed in a zig-zag manner 3 or 4 inches distant, and about 3 inches below the soil.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant, Oxon.

Cordon-trained Wall Trees of Apples, Pears, Plums, and Cherries, when they receive proper cultural treatment, give excellent returns, both in regard to the quality and quantity of their fruit, and many of the finest exhibition specimens of these fruits are grown on cordon trees, which are equally adapted for growing in large or small gardens. If the work of pinching the shoots in summer was duly carried out in accordance with instructions given at the time, all that will be necessary now is to shorten the strongest shoots back to within three buds. In cases where the fruiting-spurs are too abundant these should be thinned, but it must be remembered that too severe practice in shortening these spurs, especially in the case of Plums, will often cause the spur to die completely. If it is desired to extend the leading shoot, it should be shortened to within 18 inches. Some varieties of Pears produce their fruit-buds on the ends of the shoots; the longest of these growths may be removed without fear of losing the crop. Where a considerable length of wall is available for planting, an oblique system of training will be found best, and the lower the wall the more obliquely should the tree be trained. In most cases an angle of 45° will be found suitable. The sap is much more equally distributed when the tree is thus trained, and a lot of useless growth at the extremity of the tree is avoided. Cordon trees may also be grown on wall buttresses.

Cordon Gooseberry and Currant-trees trained on north walls are valuable for producing late crops of these fruits, and for continuing the supply very late in the year. These should now be "spurred" back, but do not leave on the Gooseberry plants too many spurs. Such varieties as Bobby, London, Shiner, Leveller, Ringer, Surprise, Blucher, &c., will produce excellent fruits grown on this plan.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn. East Sheen, S.W.

Odontoglossums.—Plants of O. crispum now in various stages of development should be given generous treatment until the flower-spikes are well advanced, when slightly drier conditions at the roots should be observed. Weak plants, especially of the choicer varieties, should not be allowed to flower, while small newly-imported plants should only be allowed to develop two flower-buds, these being left in order to ascertain the variety. Plants that have finished flowering should be thoroughly rested by keeping them well on the dry side until new growth commences. Any plants that were not potted in the autumn, and which are now growing, may be re-surfaced or repotted as their needs demand. When preparing these plants for potting, remove most of the leafless pseudo-bulbs, so that large pots will not be required. Any pieces of valuable varieties thus removed should be placed on damp moss, with the object of propagating them, and thus obtaining duplicates of the varieties. For general purposes of propagation this method is not to be commended, the surest and quickest plan being to sever the rhizome between the two last pseudo-bulbs developed. This should be performed soon after the plant has flowered, when probably new growths will develop from both these pseudo-bulbs, and when the growths are an inch or two in length the division should be completed, and the pieces potted separately. This is the only reliable means of duplicating plants of varieties of Odontoglossums. O. Pescatorei needs much light and rather less water at the roots when the plants are nearing the flowering stage, otherwise the plants are liable to commence growing without producing their flower-spikes. O. Hallii, O. luteo-purpureum, O. sceptrum, and others of this section, should be staged at the warmer end of the cool-house, placing such members as O. triumphans, O. tripudians, O. Harryanum, O. polyxanthum, and the forms of O. crispum, in an intermediate position; while to plants of the Mexican section, such as O. Rossii, O. Cervantesii, O. nebulosum, O. maculatum, and O. cordatum, should be allotted the cooler end of the structure. The natural hybrids, such as O. excellens, O. Adrianæ, O. loochristiense, O. Wilckeanum, &c., together with the home-raised hybrids, O. Harryano-crispum, O. Rolfeæ, O. ardentissimum, O. bellatulum, &c., should be placed in a favourable position at the warmer end of the house, as their requirements coincide with those of O. crispum. O. cirrhosum and O. elegans need rather more heat than the cool-house usually affords. When these plants are approaching the flowering stage the application of water must be somewhat restricted, or growth will ensue instead of the production of flowering-spikes. O. hastilabium is another species that needs more favourable conditions with regard to heat and light. This species suffers from prolonged flowering, and should signs of weakening appear, remove the flower-spikes at once, and keep the plants dry for a period. The application of air to the cool-house at every available opportunity cannot be too strongly urged, both roof and wall ventilators should be used in mild weather, but when cold winds prevail restrict the ventilation to the lower openings. Whenever the outside thermometer does not indicate a temperature below 38°, a little bottom air should be permitted at night-time.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Creepers on Walls.—If it is intended to plant these, fix the necessary wires and prepare the borders for their reception. Established creepers that require pruning and tying should be seen to, taking care to make the cuts at an obtuse angle, and to place the tie neatly. Train the growth so that the wall can be discerned, as it adds to the effect if the creepers give a "traceried" appearance. Tender plants on walls, such as Ceanothus Gloire de Versailles, Ceres, and Indigo; Smilax asperrima, Magnolia grandiflora, Abelia rupestris, &c., must be protected from frost. In addition to well-known varieties of creepers, the following kinds are also good: Vitis Coignetiæ, this requires plenty of room, such as a sheltered gable—the colouring of its foliage is most brilliant in autumn; Buddleia variabilis Veitchiana—this is a marked improvement on the type; Indigofera Gerardiana—this plant flowers profusely; Elæagnus aureo-pictus, Schizophragma hydrangeoides, Jasminum revolutum, Garrya elliptica, and Lardizabala biternata. The following plants, being strong growers, are suitable for covering rough places or trees:—Polygonum Baldschuanicum, Lycium sinense, and Periploca græca. Clematis of the Jackmanni type should be cut back, leaving a few feet of last season's growth.

Preparation for Seed-sowing.—As seed-time is approaching have pans, boxes, and suitable soil put in readiness in order that sowing can be done without delay. The compost should be got ready and placed under cover, and should consist of sifted friable loam, leaf-mould and sand thoroughly mixed together and passed through a 1½-inch sieve. Place suitable material for drainage in the pans, covering the drainage with some of the rougher soil. Make the soil in the seed-pans moderately firm, filling them to within 1 inch of the top. Sift a small layer of the compost through a ¼-inch sieve into the seed-pan, make the surface level, and then sow the seed. Label the pans carefully, and next cover the seed with some soil, using the ¼-inch sieve again. Make the surface firm, using a piece of board for the purpose. Water with a fine rose, or if the seed is very fine dip the pans for a few minutes in the tank. Shade till germination takes place. Fine, small seeds should be sown on the surface of the soil and not covered.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Jan. 24 { Roy. Hort. Soc. Coms. Meet. / Nat. Rose Soc. Com. Meet.
FRIDAY, Jan. 27—Roy. Bot. Soc. Meet.

SALES FOR THE WEEK.

MONDAY, January 23—
Greenhouse Plants, Gladioli, Border Plants, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.
TUESDAY, January 24—
Important Unreserved sale of Nursery Stock, at The Nurseries, South Woodford, by order of Mr. John Fraser, by Protheroe & Morris, at 11. (Three days).
WEDNESDAY, January 25—
Azaleas and Palms from Belgium; Roses, Begonias, &c., at Protheroe & Morris's rooms, at 12.—Enormous consignment of 2,292 cases of Japanese Liliums, 1,800 Pæonies, Tuberoses, Lily of the Valley, &c, at 3 o'clock, by Protheroe & Morris.—Palms, Azaleas, Roses, Lilies, &c, at Stevens' Rooms, 38, King Street, Covent Garden, at 12.30
FRIDAY, January 27—
Flowering Shrubs, Spiræas, Roses, &c., at Protheroe & Morris's Rooms, at 12.—Imported and Established Orchids, at Protheroe & Morris's Rooms, at 12.30.

(*For further particulars see our Advertisement columns*)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —38·4°.
Actual Temperatures:—
London.—*Wednesday, January* 18 (6 P.M.): Max. 42°; Min. 34°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 19 (10 A.M.): Bar., 30 3; Temp., 37°. Weather—foggy.
Provinces.—*Wednesday, Jan.* 18 (6 P.M.): Max. 43°, Cornwall; Min. 34°, N.E. of Scotland.

Mites.

A group of insects which includes such pests as the itch-mite, the sheep-scab, the Currant-bud-mite, the red-spider, the bulb-mite, and others, has a painful interest for many, and a special interest for gardeners. Many of the insects justify their name by their extreme minuteness, and they escape observation not only from this cause, but from the fact that having done all the mischief of which they are capable, they migrate elsewhere, so that when the microscopist turns his lens on the galls or other excrescences which result from their puncture, no mites are to be seen. So difficult is the study of these creatures, and so generally unattractive are they, unless to professed specialists, that comparatively few entomologists have devoted their attention to them. Among the most indefatigable and most acute investigators of the Acarina is our valued correspondent, Mr. Albert Michael, to whom we are under great obligations for information on these creatures, and whose works, published by the Ray Society in 1883, 1887, 1901, and 1903, are standard works on the subject on which they treat. A summary of Mr. Michael's observations, together with those of other investigators, is contained in a pamphlet which is published separately, having originally been issued in the *Proceedings of the United States National Museum*, vol. xxviii. (1904). This is entitled a monograph of the Acarina or mites, and is prepared by Mr. Nathan Banks. It is full of anatomical details, which appeal mainly to entomologists, but many of the creatures concern gardeners, as anyone who has to deal with red spider knows. Mr. Banks tells us that flowers-of-sulphur, applied either as a dry powder or as a spray, is the best remedy. Campbell's fumigator, we may add, is well spoken of in this connection. Bisulphide of lime and tobacco water may also be used advantageously.

Ticks are not only directly injurious to the animals on which they feed, but many of them are subject to parasites which when conveyed into the blood cause fevers and other diseases. For ticks which affect poultry, the author recommends that the hen-house be washed out with kerosene, benzine, or gasoline, or the house be whitewashed with carbolated lime; a mixture of kerosene and sulphur plastered upon the roosts is also very useful.

The bulb-mite, Rhizoglyphus hyacinthi, is responsible for an enormous amount of damage. It burrows into healthy tissue, thereby giving entrance to destructive fungi and bacteria. The best way, says our author, is to burn the affected bulbs as soon as the mite is discovered; but on this side of the Atlantic less drastic measures are sometimes successful. Some growers, Mr. Banks tells us, secure good results by the following treatment:—"The soil of infested plants is allowed to become dry, then the bulbs are taken out and washed in tobacco-water and soft-soap, with a small amount of washing soda. Then they are sprinkled with freshly-slaked lime and left for two days. Then they are washed with the same solution as before, to which a little petroleum has been added. They are then repotted, and often do well."

The itch-mite, Sarcoptes, is another of this family whose presence is not regarded with complacency. Cleanliness and the application of sulphur ointment are the well-tried remedies. Sheep-scab is another most unwelcome visitor—he may be ousted by tobacco-water and sulphur used warm. Another group too well known to the gardener—at least so far as the mischief done by the species is concerned—is the Eriophyidæ, better known as Phytoptidæ. The creatures are readily overlooked, so minute are they, and hence some of the hairy or scaly excrescences on the leaves caused by these mites were once considered to be fungi, and named Erineum. When the hairs attract notice the mites have disappeared, another reason why the botanists have been misled. The Pear-leaf blister is very common in this country, and is due to the puncture of a mite, Eriophyes (Phytoptus) pyri. The insects pass the winter in the buds, and begin to feed before the leaves are unrolled. They form red blister-like spots nearly a fourth of an inch across. These spots become green by June and then turn brown, and the tissue becomes hard and corky. The spots often coalesce and form large blotches. Professor Slingerland has shown that they can be practically exterminated by spraying the trees in winter with kerosene emulsion diluted with from five to seven parts of water. The Black Currant Gall-mite, Eriophyes ribis, penetrates the buds, causing them to swell, and badly infested buds die before opening. The mites breed throughout the year. They migrate in the spring when the buds are opening, and may be destroyed at this time by a wash of soft-soap and sulphur. It has been observed that this species can stand upright and even jump into the air and be carried some distance by the wind. In this country attempts to destroy the mite have not been attempted with much success. Mr. Banks is to be congratulated on his work, and the thanks of the community are due to the authorities of the Smithsonian Institute and of the United States National Museum.

Our Supplementary Illustration to the present issue represents a view in the conservatory at Upton Grove, Tetbury, the residence of C. Harding, Esq. A conservatory is very pleasing at this dull season of the year, when well furnished with flowering subjects such as those depicted in our illustration, including Cinerarias, Primulas, Richardias, Begonia Gloire de Lorraine, &c. How trying the effects of such fogs as we have recently experienced are to those having the charge of plants under glass is only too painfully evident when one passes through such structures as these after a dense fog. To see one's plants, which have entailed months of skilful culture, ruined by the sudden descent of such climatic conditions is discouraging. A gardener's life, however, with all its disappointments, has its compensating joys.

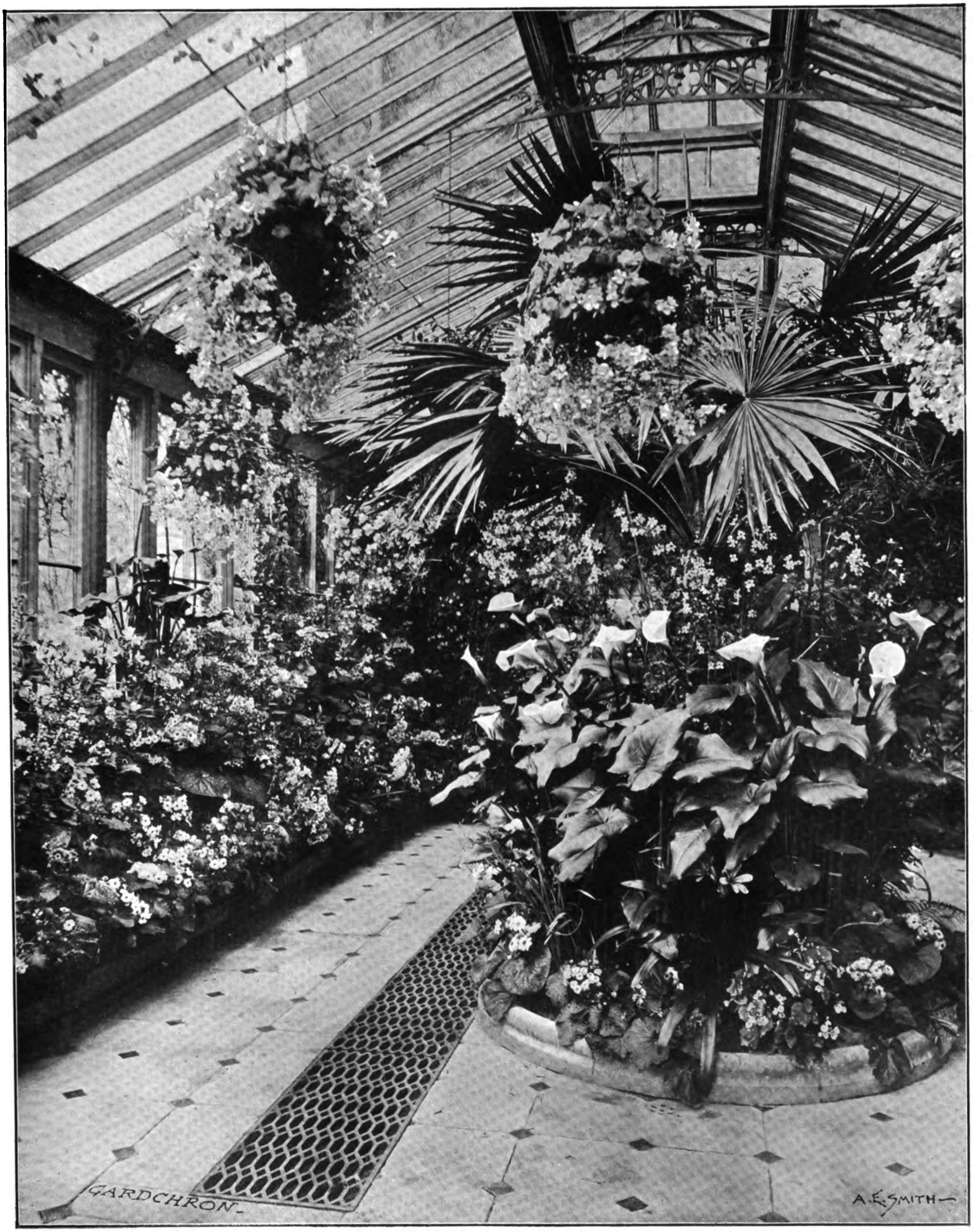
The Gardeners' Orphan Fund.—Subscribers to this Fund will be glad to hear that Mr. George Smith, who was one of the first to enjoy the benefits of this Society, has successfully passed the examination of the Sanitary Institute, a circumstance which leads us to hope that, thanks to the aid afforded in his earlier years, the foundations of his future success are securely laid.

The Congress of the French Society of "Chrysanthemists" will be held in Paris in the autumn of 1905, at Caen in 1906, and at Toulouse in 1907.

Flowers in Season.—From Messrs. James Smith & Sons, Darley Dale, we have received excellently flowered examples of a new variety of the Mediterranean Heath, a plant well known to travellers in districts bordering the Mediterranean. Messrs. Smith state: "We are sending you sample blooms of Erica mediterranea hybrida, which was raised in these nurseries some years ago. It is quite distinct from E. herbacea carnea, as each shoot is tipped with white during the summer. The plants have been in flower since the beginning of December, growing at an altitude of 600 feet above the sea-level. They succeed best in dry, brown, loamy soil. It is a valuable acquisition to the variety of hardy Heaths."

Bulb Society of Haarlem.—The quinquennial exhibition of the Royal Bulb Growers' Society of Holland will, as we have already announced, be held at Haarlem from March 17 to 21 next. The exhibition it is expected will be large and interesting, and though mainly national in its objects, English and other foreign judges will be asked to adjudicate upon the exhibits, and will meet with a cordial reception.

Edinburgh Exhibition.—At the Grand International Show to be held at Edinburgh on September 13, 14 and 15, 1905, Messrs. William Bull & Sons are offering, through the Royal Caledonian Horticultural Society, special prizes, including a Silver Cup value ten guineas and £5 in cash, for new plants sent out by the firm of William Bull & Sons.



VIEW IN THE CONSERVATORY AT UPTON GROVE, TETBURY, THE RESIDENCE OF C. HARDING, ESQ.

BRITISH GARDENERS' ASSOCIATION.—Nearly one hundred gardeners of Reigate, Redhill and district assembled at Redhill on Tuesday, the 10th inst., to hear an address delivered by Mr. Watson, of Kew, on behalf of the British Gardeners' Association. The meeting was enthusiastically in favour of the project, only one gardener present offering any opposition, whilst a resolution to form a branch of the Association in that district was adopted almost unanimously. Mr. Seaman, head gardener at Margery Hall, Reigate, was elected local Secretary of the Society.

—— On Friday the 13th inst., a meeting was held in the Free Library at Swansea to hear addresses by Mr. W. W. Pettigrew, of Cardiff, and Mr. R. Hooper Pearson, London. An ex-Mayor of Swansea presided, and, in spite of the inclement weather, there were upwards of fifty gardeners and nurserymen present. It was unanimously decided to establish a local branch of the British Gardeners' Association. Mr. D. Bliss, Superintendent of the Public Parks at Swansea, was appointed to be the local Secretary, and he at once started with a list of twenty or more candidates.

A TRIP TO PARIS.—On Saturday last a party of gardeners from Evesham and the district started for Paris, where they intend to study the methods of French gardeners, with particular reference to the forcing of Lettuce and other outdoor vegetables. For years it has been a matter of surprise that glass is not more utilised in the Vale of Evesham, and it is hoped that this practical demonstration of what can be done by a comparatively small outlay will have the effect of inducing local growers to adopt this system of culture. About thirty prominent growers were included in the party.

—— One of the French gardening papers—we will not mention its name—begs its readers to receive the English visitors with every courtesy "at the gate," but not to tell their "hereditary enemies" anything beyond what all the world knows. This looks very much as if our contemporary is not anxious that the visitors should proceed beyond the gate. Happily for us, our own experience shows that French gardeners as a rule are most desirous to be of assistance to their visitors, and do not treat them as enemies.

MANURES FOR CHRYSANTHEMUMS. — M. George Truffaut's researches show that while there are differences in constitution as regards varieties, yet as a whole it may be said that if it is desired to grow dwarf, robust plants with firm, regularly - distributed foliage and brightly-coloured flowers, the following facts must be borne in mind:—Phosphoric acid assists in the formation of woody tissue and chlorophyll, hastens the production of flowers, and specially heightens the brilliancy of their colours. Without potash the leaves are flaccid, the stems hollow, the flowers of bad shape, and their development retarded. Excess of nitrogenous manure is singularly injurious to the Chrysanthemum. Details of M. Truffaut's investigations are given in the *Chrysanthème*.

THE RAINFALL IN 1904.—In last week's issue detailed information was given respecting the amount of rainfall at Rothamsted during the past year. The particulars from Rothamsted are specially interesting, because the gauge there is much larger, and offers better facilities for accurate observations than those possessed in most gardens. Our valued correspondent, Mr. Mawley, has also kept our readers fully informed concerning the rainfall and state of weather generally in West Hertfordshire, and these have been supplemented by the returns from the Royal Horticultural Society's gardens at Wisley, in Surrey. Several correspondents have also kindly furnished us with information of the amount of rainfall registered in private gardens, and though our space will not permit of these being given in detail, we have pleasure in appending the totals. Mr. H. Parr, Trent Park Gardens, New Barnet, registered 23¼ inches; Mr. A. H. Hall, Bostock Hall Gardens, Middlewich, Cheshire, 24·79 inches; Mr. Frank J. Clark, Wistow Hall Gardens, Leicestershire, 19·81 inches, being 4 inches below the average for the past sixty-two years; Mr. J. B. Lowe, D'Abernon Chase Gardens, Leatherhead, Surrey, 24·68 inches, as against 42·47 inches in 1903; and Mr. Neil Sinclair, Hampton Manor, Warwickshire, 22·57 inches, being 10·50 inches less than that for 1903. The highest temperature during the year at Hampton Manor was 86° (shade), on August 3, and the lowest 7° on November 23. The greatest degree of sun-heat was 132°, on August 3. Mr. W. W. Pettigrew, Roath Public Park, Cardiff, 42·28 rain in 1904, as compared with 56·37 in 1903.

HYBRIDISATION OF PINEAPPLES.—The following extract on this subject is taken from the Annual Report on the Public Gardens and Plantations, Jamaica, for the year ended March 31, 1904:—"With a view of raising a variety of Pine that would combine the fine appearance and shipping qualities of the Smooth Cayenne with the delicious flavour of the Ripley, experiments in hybridisation were instituted in the year 1901. As a result of the initial experiment, sixty-four plants were raised and planted out. The Ripley flowers were cross-fertilised between April 25 and May 20, 1901, and the fruits ripened in the middle of July; the seeds were sown in clean sand the first week in August, the seedlings potted into Bamboo pots early in September, 1901, and planted out at a distance of 2 feet apart in August, 1902. Several of the plants very quickly took the lead and grew vigorously, whilst a number of them exhibit a very feeble constitution: all differ from each other in appearance—some are spineless like the male parent, and some are spiny like the Ripley. The first fruit was cut on November 18, 1903, and was fairly good; the second one was stolen—it resembled very closely the 'Red Spanish.' The third to ripen was a curiosity, a rather poor 'Cayenne,' devoid of top. Others are now developing fruits. During 1901 preparations were made for extending this important work, and in the following year, 1902, Cayenne, Ripley, and Queen were brought into flower at the same time to permit of crossing and intercrossing, resulting in the following being raised:—

Ripley × Cayenne	900	seedlings.
Cayenne × Ripley	800	"
Queen × Cayenne	100	"
Queen × Ripley	25	"
Ripley × Queen	120	"
Fertilised by natural means ...	250	"
Total	2,195	"

These have been planted out at a distance of 9 inches apart in nursery beds, to be grown on to the sucker size and treated as such when large enough, e.g., dug up, trimmed, and planted out in 'field' beds. The third batch, numbering 500, raised in 1903, is now being nursed in 3-inch pots in the glass-house."

SKIN IRRITATION.—The inflammation of the skin caused by incautious handling of Rhus Toxicodendron is well known. A similar effect is produced by Primula obconica. The record of these facts has induced Mr. Maiden to search for other cases of a similar kind. Omitting such plants as the Nettles, Mr. Maiden enumerates Phlebatium argenteum (Rutaceæ), Dysoxylon Richii and D. Muelleri (Meliaceæ), Rhus radicans, diversiloba, and vernix (Anacardiaceæ); Castanospermum australe (Leguminosæ), Eucalyptus maculata, E. hemiphloia (Myrtaceæ), Cassinia aculeata, Pyrethrum Parthenium (Compositæ), Primula obconica, P. sinensis (Primulaceæ), Excæcaria Agallocha, E. parviflora (Euphorbiaceæ) Thuya Douglasi, Carrière [We are not able to identify this name. Carrière does not mention it, and we are left in doubt as to whether the plant intended be Thuya plicata = gigantea, which seems the more probable, or Pseudotsuga Douglasi]; Hyacinthus orientalis, Richardia æthiopica. No doubt the list could be widely extended; but it would be desirable to distinguish between those that act merely as mechanical irritants, like the hairs of Mucuna or the raphides of bulbs, and those that introduce some actually poisonous matter into the blood.

NATIONAL FRUIT-GROWERS' FEDERATION.—The meeting of the Council took place on Monday, January 16, in the new Hall of the Royal Horticultural Society in Vincent Square, Westminster. Mr. F. S. W. Cornwallis presided, supported by Col. C. W. Long, M.P., President-Elect. Mr. Waghorn, barrister-at-law, kindly attended, and had a long conference with the growers present on the subject of Preferential Railway Rates, and treatment of home-grown fruit in transit compared with that imported from abroad. The discussion was of a most important and interesting character, and when concluded the Council of the Federation appointed Mr. Miskin to represent them officially as a witness before the Departmental Committee now sitting to enquire into the above question. The new Railway Services Committee, consisting of seven members, was then definitely appointed. The Finance Committee presented their Report, which showed a considerable improvement in the position of the Federation during the past year. After the rising of the Council the new Railway Committee held a preliminary meeting.

REDOUTÉ'S WORKS.—In the current number of the *Journal of Botany* is an important note relating to the date of publication of the several parts of Redouté's *Liliacea*, and of the same author's *Les Roses*, and *Choix des plus belles Fleurs*. Like the similar bibliographical note relating to the *Pinetum Britannicum*, published in our columns, this note is the work of Mr. B. B. Woodward, to whom the thanks of students are specially due.

THE CYPRESS-PINES OF NEW SOUTH WALES.—Mr. Maiden, in the *Forest Flora of New South Wales*, vol. ii., part 2, has an interesting chapter on the Australian species of Callitris. They vary greatly, so that field-knowledge is indispensable to a proper understanding of the genus. The trees are beautiful and very fragrant, yielding useful timber of showy appearance. The resin called sandarac is obtained from these trees, but at present little use is made of it in Australia. "There is nothing," says Mr. Maiden, "more delightful than the approach on a winter evening to a township where Cypress-Pine is used as a fuel. Its delicious perfume is borne on the air for miles, and is often the first intimation that the weary traveller experiences that he is approaching a human habitation, and that his long journey is drawing to a close." Eight species, natives of New South Wales, are described and figured by Mr. Maiden, viz., columellaris, Macleayana, verrucosa, robusta, Muelleri, propinqua, calcarata, and cupressiformis. There are thirteen species in all, for the Algerian plant, to our thinking, is no Callitris, but a Tetraclinis; though, according to Dr. T. A. Henry, the resin is identical in composition to that of the Australian species. The African Widdringtonias are also nearly allied to but distinct from the true Callitris. With the usual perversity of popular names, these trees are not Cypresses, and are still more widely separate from Pines.

FLORAS OF INDIA.—The recent announcement of the undertaking of a Flora of the Punjab by Mr. Drummond of the Indian Civil Service is another step towards completion of the botanical survey of the country. Of existing works on the botany of India the most important, of course, is Sir Joseph Hooker's *Flora of British*

India. For Western India there is a Flora under preparation at Kew by Dr. Theodore Cooke, late Principal of the College of Science at Poona. In Bengal we have Major Prain's *Bengal Plants* in addition to that valuable publication the Annals of the Royal Botanic Garden and the Records of the Botanical Survey of India. For Upper India there is Mr. Duthie's *Flora of the Upper Gangetic Plain*, the first volume of which has been lately published. The author is now busy with the subsequent volumes at Kew. In Southern India much valuable botanical work is being accomplished by Mr. C. A. Barber, the Government Botanist there, and our knowledge of the resources of that part of the country in this respect is steadily expanding. Thanks to a complete organisation presided over by Major Prain as Director of the Botanical Survey of India, the general progress in Botany is as satisfactory as that in Agriculture, and further advancement is undoubtedly "the order of the day." *Indian Planting and Gardening.*

DONATIONS TO GARDENING CHARITIES.—The Altrincham and District Gardeners' Improvement Society has been enabled, by means of concerts promoted by it during 1904, to forward sums of £31 10s. to the Gardeners' Royal Benevolent Institution, and of £15 to the Royal Gardeners' Orphan Fund. This is worthy of imitation by similar gardening societies. Two pounds in addition were granted to purposes of local charity.

"THE RATEPAYER'S GUIDE."—We can best describe the scope of this pamphlet by quoting from its sub-title, which states that it contains: "Notes upon the assessment of property to and appeals against the poor rate. Machinery, hypothetical tenant, unoccupied property, caretakers, new houses, residences, public-houses, brickfields, mines, advertising stations, tithe rent-charge, woods, sporting rights, agricultural land, small tenements and compounding forms, and remarks as to appeals, reports of cases," are all passed in review. As the author, Mr. Goddard, states that he has had thirty years' experience as an estate agent, surveyor and valuer, his opinions should be of value to those who need his assistance. It will be of interest to our readers if we quote the paragraph relating to the rating of woods:—"The Rating Act, 1874, defines land used for the growth of timber for a plantation or a wood, and not subject to any right of common, as rateable according to its value in its natural and unimproved state, *i.e.*, as uncultivated land without any timber upon it." The following paragraph defines the law respecting agricultural land:—"By the Agricultural Rates Act, 1896, the occupier of agricultural land is liable to pay one half only of the rate in the pound, payable in respect of building and other hereditaments. 'Agricultural land' is defined as 'any land used as arable, meadow, or pasture ground only, cottage gardens exceeding one quarter of an acre, market gardens, nursery grounds, orchards, or allotments, but does not include land occupied together with a house, as a park, gardens, other than as aforesaid, pleasure grounds, or any land kept or preserved mainly or exclusively for the purposes of sport or recreation, or land used as a racecourse.' Glasshouses in or on a market garden must be rated as buildings, and not as agricultural land." The book is published by the author at St. Stephen's Chambers, Wolverhampton.

TOUGHENED GLASS FOR GARDEN STRUCTURE.—A short time since a Bordeaux newspaper, *La Gironde*, drew attention to a new material for garden and other structures, which it termed "Verre armé"—glass-armoured iron meshwork. These remarks have been translated by Mr. Macdonald, H.B.M. Consul at Bordeaux, and are now in the archives of the Foreign Office. A meshwork of wire of any pattern or measurement—square, oblong, octagonal, &c.,—is embedded in liquid glass, so as to form, when cooled and trimmed or polished, slabs, shelves, &c., suitable for carrying pots, &c., or for use in the ornamentation of conservatories and other structures. Severe tests give excellent results in favour of the new invention, and we think it will readily be seen that it may be made subservient to decorative purposes, based on the wirework. Nowadays the wireworker produces very artistic designs in iron, brass, nickel, copper, &c.; these, armoured or coated with glass to regulated depths, might be made to serve the double purpose of weight-carrying and ornamentation. Doubtless those concerned in horticultural architecture will see to all this.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.—The number published in December last contains coloured figures of—1, Cattleya velutina, Rchb. f.; 2, Cyripedium Orion, Sander; 3, C. Villebois Mareil, Cappe; 4, C. Manto, Rolfe; 5, Epidendrum prismatocarpum, Rchb. f.; 6, E. ramiferum, Lindl.; 7, Eria clavicaulis, Wall; 8, Eulophidium Ledieni, De Wild.; 9, Lycaste Skinneri var. hellemmensis, Cogniaux.; 10, Odontoglossum crispum var. Karthausi, Hort.; 11, O. armainvilliersense var. ardentissima, Rolfe; 12, Oncidium Warcewiczii, Rchb. f.; 13, Schomburgkia undulata, Lindl. This useful little publication is edited and published by M. Goossens, Avenue Walkiers, Auderghem, Brussels.

SNOWDROPS.—To see Snowdrops in flower in the open-air near London on January 15, in the midst of such weather as we have had, is sufficiently noteworthy, but when we say that the locality was the garden on the Thames Embankment the fact is more remarkable.

"AMERICAN GARDENING."—The Fruit-Grower Co., St. Joseph, Mo., announces that every subscriber whose name appeared on the books of *American Gardening*, the weekly horticultural paper formerly published at New York, will receive this month a copy of the *Fruit-Grower*, instead of the former publication. *American Gardening* will cease to be published, and arrangements have been made whereby this Company will fulfil all unexpired subscriptions to *American Gardening*. The *Fruit-Grower* is a large-sized "live" paper, which would be more attractive were the obtrusive announcements relegated to their legitimate place in the advertisement columns.

THE COLD WEATHER ON THE RIVIERA.—The Côte d'Azur is not invariably warm and sunny. A recent cold "snap" has done much damage to the flowers, and has affected prices in Covent Garden. The weather was the worst ever known on the Riviera, and the damage done to flowers is enormous. The total losses sustained by the destruction of the flowers is placed at £180,000 or more. Market gardeners and others declare they are crippled for the season. The scent trade will certainly suffer heavy losses, while the Orange-trees have been severely frost-bitten. The tropical garden at Monte Carlo has suffered terribly.

"THALACKER'S ADRESSBUCH UND KALENDER."—This is a very convenient little book for those who have dealings with German nurserymen, as it contains a list of the commercial firms in all the kingdoms and provinces of the Empire, together with a diary and various notes useful to gardeners. It would be improved by the addition of an alphabetical list of the names of persons as well as of places. We had some difficulty, for instance, in finding the names of Mr. Späth and of Messrs. Seidel, of Dresden and Beyroydt. The railway map is too small to be of much service, and, owing probably to the want of space to put it on the right bank of the Elbe, Altona appears on the left side of that river. The following remarks taken from the preface will be read with interest:—"During the year 1904 [German] business transactions with foreign countries have remained about the same. That which has been gained on the one hand by a brisk export trade to England and America, and by the fostering of intercourse with Austria and other neighbouring countries, has, on the other hand, scarcely compensated for the injury to the horticultural trade caused by the Russo-Japanese war. It is undeniable that the insecure political position of Russia will have still further a disastrous influence upon our transactions, and as the ultimate results of the war cannot as yet be foreseen, it is not possible to realise how severely and permanently injured trade interests will be." The "Adressbuch" is published by Bernhard Thalacker, Leipzig-Gohlis, and may be had from Messrs. Williams & Norgate.

THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord Onslow to inquire into and report upon the fruit industry of Great Britain held sittings on the 17th and 18th inst. Evidence was taken from the following witnesses:—Col. Sir Herbert Jekyll, K.C.M.G., Assistant Secretary of the Board of Trade; Mr. Brooke-Hunt, Superintending Inspector of the Board of Agriculture and Fisheries; Mr. W. Chambers, and Sir Thomas Pink.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—On Thursday last, as these pages were passing through the press, the supporters of this Institution met at Covent Garden Hotel to transact the business pertaining to the annual meeting, and to elect a number of pensioners to the Fund. In the evening the Committee and friends met at the annual friendly supper. Owing to our having to print a much larger number of copies than formerly, by reason of our increased circulation, these pages have to be sent to press earlier; but a report will be given next week.

LAWNS.—Messrs. James Carter & Co. publish a little pamphlet on the formation and management of lawns, cricket fields, putting greens, and other grassy grounds. The directions given are clear and practical.

"LE JARDIN" AND "THE GARDEN."—It is becoming customary, following in this respect the long-established practice of the *Botanical Magazine*, to dedicate the annual volumes of the gardening periodicals to certain distinguished gardeners. The last volume of *The Garden* was thus dedicated to Mr. Burbidge, of whom an excellent likeness was given, and its French namesake dedicates its eighteenth yearly volume to M. Albert Truffaut, of Versailles, a gentleman held in high estimation on this side of the Channel as well as in France.

THE ROSARY.

ROSA GIGANTEA.

I should be greatly obliged to anyone who has grown this Rose for some years if he will state whether or not his plants were raised from seeds and are growing on their own roots, or whether they are worked on the Briar or some other stocks?

Mr. W. B. Hemsley, of Kew, states in the *Botanical Magazine* for September last that Mr Cant, of Colchester, was successful in flowering this beautiful Rose; the Editor of the *Gardeners' Chronicle*, in a note on p. 211, also says, Mr. Cant found it no good, and does not grow it any longer. I presume that from the description given by Mr. Cant, all who have seen the true R. gigantea will come to the conclusion that what Mr. Cant grew for Rosa gigantea was nothing of the kind. Some years before I got the true R. gigantea I bought two plants; one died, but the other flowered the second year, but it was not R. gigantea, it was a single Rose of a pinkish-white colour, and the foliage was more like that of Rosa simplex, and much smaller than that of R. gigantea. The very fine figure of this splendid Rose, given in the *Gardeners' Chronicle* on July 6, 1889, p. 13, filled me with enthusiasm to try to flower this gem. Grow it I could, but to flower it in this country is not so easy a matter, although I believe ere long it will become one of the favourites in our Rose-gardens. I have had many conversations with travelled men, and ladies too, and they tell me we can have no conception what a grand sight this Rose presents when in flower in India and China; but, like many other plants of note that are not much grown, there are spurious ones sold. As a great traveller told me, unless this Rose is more grown there will remain a difficulty in obtaining it true, as he himself had seen several forms sold as R. gigantea.

Two years ago a nurseryman wrote me a very kind letter from Naples, asking me how to flower this Rose, as he had failed; but being ill at the time, I was unable to answer him, the letter being lost; but as he was evidently a regular reader of the *Gardeners' Chronicle*, I trust he may see now why he received no reply. Although I think this Rose would grow and flower well in and around Naples, I am given to understand Rosa sinica and its form lævigata is by many grown as R. gigantea in parts of Southern Europe; yet the two are quite distinct. *W. C. Leach, Albury Gardens, Guildford.* [At Kew this Rose has, we believe, not flowered, though it grows vigorously. The conditions in this country appear not to be favourable, though at Cannes, in Lord Brougham's garden, it has produced its splendid blooms. Ed.]

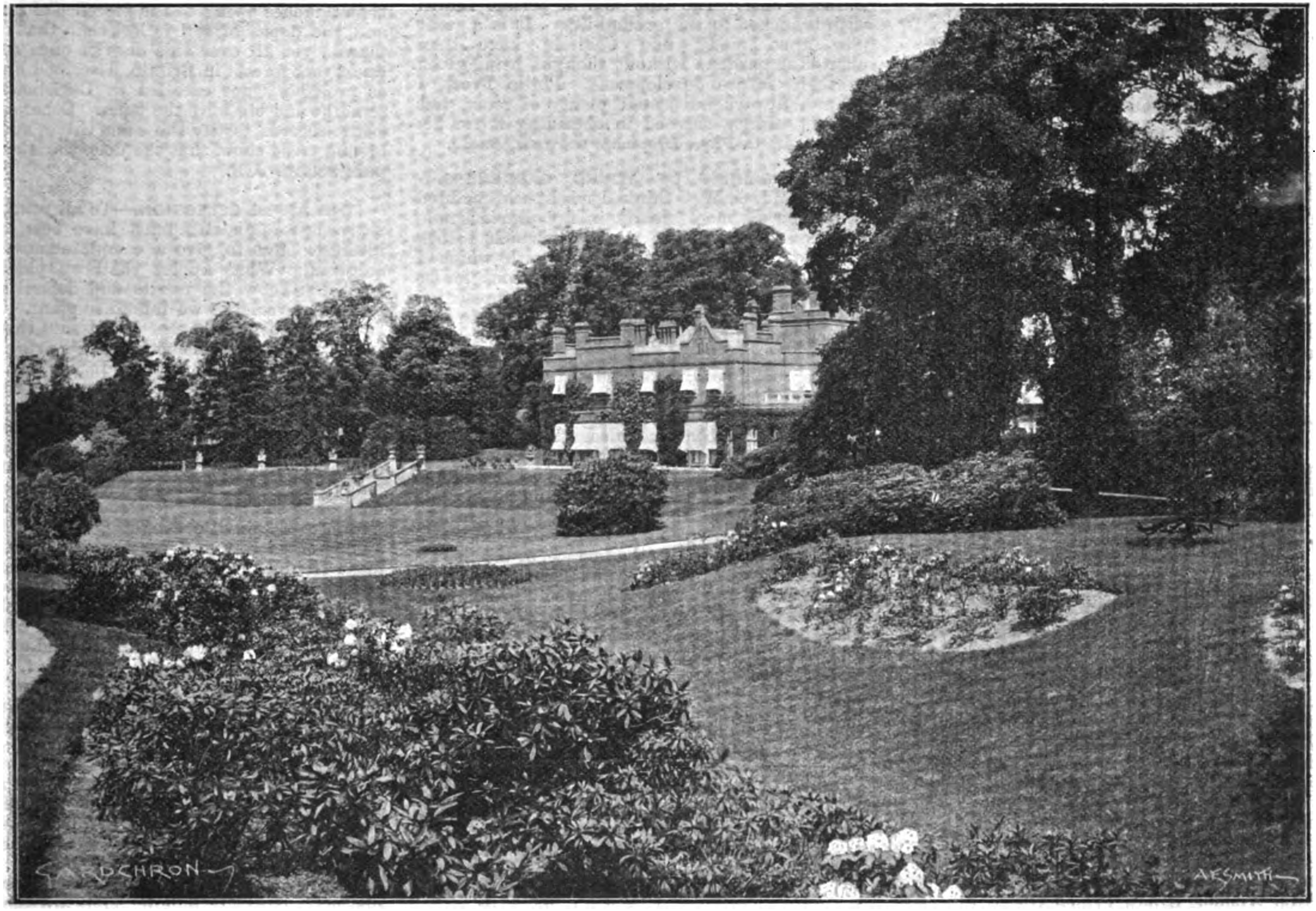


FIG. 23.—KING'S WALDEN BURY, HERTFORDSHIRE, THE RESIDENCE OF T. F. HARRISON, ESQ.

KINGS WALDEN BURY PARK.

By stopping at Hitchin station on the Great Northern Railway and proceeding about 6 miles, the visitor will arrive at the lovely residence of T. F. Harrison, Esq.

The mansion has been restored by Mr. Harrison, who has made wonderful changes everywhere and in everything. New gardens have been made, new bothies and new cottages have been built, and a splendid parish-room added and furnished, the reading-room is provided with all kinds of indoor games, from dominos to billiards. In the summer the young men have the use of a fine cricket ground provided with dressing-rooms, &c., and the whole overlooks the splendid grounds and lawns of the owner, who also joins in the games.

New walls have been built around the gardens and the choicest fruit-trees are planted against them. The glass department consists of about thirty houses, which are all modern. One lot was built by Messrs. Gray, of Chelsea, and forms a block of twelve divisions. In the greenhouses such flowering plants as Carnations, Lilies, Spiræas, Amaryllis, Primulas, and Cinerarias make a fine show early in the year.

In the stove, that beautiful Begonia, Gloire de Sceaux, is cultivated very successfully. Palms, Ferns, and Codiæums are well grown, and Asparagus Sprengeri throws sprays 10 to 12 feet long from a basket suspended from the roof. Many plants are grown for supplying flowers for cutting, such as Eucharis and Gardenias. Regal and zonal Pelargoniums are a feature. The Orchids include such useful species as Dendrobiums, Cattleyas, Oncidiums, and Cypripediums, besides others. Several houses are devoted to the forcing of Strawberries, French Beans, Tomatos, and Cucumbers.

The vineries are planted with the varieties Muscat of Alexandria, Black Hamburgh, Madresfield Court, Appley Towers, Lady Downes', and others. In the Peach-houses are well-trained trees of the best varieties of this fruit and of Nectarines. Some good ranges of pits have been erected.

A noticeable feature at these gardens is the recently-built fruit-room, which is the best that I have seen. It has two floors, an upper one for Pears, and the other for Apples; the size of each room is 30 feet by 20 feet. The structure is built on sloping ground, so that both rooms are reached from the ground-level. The walls are hollow, and double doors are provided, the inner one being of glass. A stage is erected in the centre with side stages all around. The roof is thatched with a rare thickness of reed, and is a marvel of good workmanship.

In the kitchen-garden, which has been made, hundreds of cartloads of soil have been brought from the park, as the natural soil is on gravel. A grass path runs down the centre. and on either side of this path are choice herbaceous plants and Roses. On the south wall is a good collection of Peaches and Nectarines.

Leaving the kitchen-garden the visitor crosses the road and enters the lawn, the entrance to which has been covered by an oak pergola some 70 yards long, which has been planted with

Roses, Vines, and other choice climbing plants. The Rose-garden is composed of large beds and arches for climbing and pillar Roses, and some extraordinary results have been obtained here, the plants making growths of from 10 to 15 feet in a season. All the beds were freshly soiled before Roses were planted, and all varieties make very healthy and vigorous growth. Quite recently many additions have again been made to the rosary; eight large beds have been planted, and trees, pillars, &c., covered. Some fine clumps of choice shrubs have been planted each year for ten years past.

Amongst the many trees and shrubs that succeed well are Garrya elliptica, 6 feet by 7 feet, and in perfect health; Betula Youngii, Choisya ternata, 8 feet high; Prunus in variety, Cupressus Lawsoniana lutea, Pinus excelsa, Sciadopitys verticillata (Umbrella Pine), Thuja dolabrata, Cupressus Lawsoniana var. Alumi, Abies concolor, A. nobilis glauca, Weeping Elm, and Beech. Willows are very effective by the lake, which has been made at the end of the lawn.

A wired-in fruit garden has been made near the stables. It is divided up by grass paths, and at each corner and in the centre are huge wire arches, over which are trailing Clematis. In this fruit garden are several hundred fruit-trees, including collections of Pears, Cherries, Plums, Apples, Raspberries, Strawberries, and Currants, each having a plot to itself.

Close by is the village church, a fine old structure, and here the Squire personally assists in the services, and some time ago provided a new organ at a cost of about £1,000.

In the park are some very fine Oaks of great age, but most of them are long since past their prime; there were plenty measuring 20 feet in circumference. A new avenue has been planted by a drive leading to the house, and the trees have made a good start. Mr. Hartless, the gardener, has had much uphill work to accomplish, but he has done it successfully, having a good and generous master. This makes hard work a pleasure to him. *W. A. Cook.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

APPLE LANE'S PRINCE ALBERT.—I was much interested in the remarks by Mr. Gerrish on p. 419 in your issue for December 17, 1904, on that excellent Apple Lane's Prince Albert, but I cannot quite agree with him when he says it is a better cropper than Newton Wonder. I have growing in one of my gardens under the same state of cultivation the varieties Bismarck, Newton Wonder, Lane's Prince Albert, Alfriston, and Bramley's Seedling. These trees all receive the same amount of feeding, whether it is stable or artificial manure, and certainly for the last five years both Alfriston and Newton Wonder have beaten Lane's Prince Albert in cropping qualities, although the last-named variety has yielded better crops than Bramley's Seedling and Bismarck. I am not writing to depreciate Lane's Prince Albert, but I give the result of my experience with these varieties. In the matter of keeping, Newton Wonder is with me an easy first. I have never been able to keep fruits of Lane's Prince Albert till March; with me they never keep longer than January. I hope this letter may be the means of other growers giving their views on this Apple, its cropping capabilities, &c. I am sorry to say that Mr. William Taylor, the raiser of Newton Wonder, is very seriously ill, and has not left his bed for several months. *Thomas Salsbury, King's Newton, near Derby.*

CEDRUS DEODARA VAR. ALBA SPICA.—This variety of the Indian Cedar promises to prove an excellent tree for planting in groups, or as specimen trees for effect. During the spring and early summer months the growing shoots, for 6 or 9 inches of their length, are of a milky-white colour. In most Conifers variegation is a sign of weakness, but in this case it does not seem to obtain, for our trees are making splendid growth each year. Should the variety prove constant, the effect of trees when they attain a height of 40 or 50 feet will be very effective. *C. Page, Dropmore.*

CRYPTOMERIA JAPONICA.—I have to-day measured a specimen tree of this species which was growing in the Pinetum here, and which had to be removed in order to allow more space to the fine Abies Brunoniana, well known to many of your readers. The dimensions were: height, 68 feet 6 inches; girth (at 5 feet), 5 feet 9 inches; at the ground line, 7 feet 3 inches. This tree was planted in 1847, three years after its introduction by Fortune, and must therefore be one of the oldest specimens in the country. It would be very interesting to know the measurements of other living specimens planted about the same date. The tree was in perfect health with branches to the ground-line. It is a great pity that many fine Conifers have been planted in gardens without thought being given to their future development. Philip Frost, I believe, always advocated plenty of room, but did not always succeed in obtaining it for his favourites. *C. Page, Dropmore Gardens, Bucks.*

THE TRAINING OF YOUNG GARDENERS.—On p. 14 "J. G. W." thinks I might have pointed out somewhat more clearly in my previous note the remarks in his on p. 411 to which I took exception. I plainly stated that with which I did not agree, and also gave my reasons for so doing. "J. G. W." in his remarks misrepresented the value of the different departments in the garden, and also the standard of young English gardeners. The theory which he puts forward of bedding with perennials, and thus saving much labour and room in the glass department, has nothing new about it, but in most gardens is quite impracticable, if not altogether undesirable. Few gardeners nowadays enjoy the privilege of bedding with material that comes easiest to hand. Although employers usually appreciate perennials about the pleasure-grounds, in the borders, &c., I question if many of them would like to see the parterre, the terrace, or the flower-garden adjoining the mansion filled with them; and would it not create too much of a sameness in the garden? Again, most perennials, from their habit of growth and the short time they remain at their best, are altogether unsuitable for summer bedding. Evidently "J. G. W." has no alternative that would save us from utilising glass for the forcing of many choice vegetables and salads during winter and spring, as he has said not a word on this subject. *W. C. R.*

FALL IN POTATO PRICES. — How clearly is it shown that sanity is once more beginning to govern the prices asked for new varieties of Potatos, when we see Northern Star offered in the columns of the *Gardeners' Chronicle* at 10*s.* per cwt., or but a fraction over 1*d.* per lb. How indeed have the mighty fallen! That offer may well merit the attention of others who ask prices varying from 6*d.* to 3*s.* 6*d.* per lb. for this greatly over-praised variety. A Hampshire grower offered me the variety at 5*s.* per bushel, and he would be very glad to sell at that price. Should not this fact do much to help to kill that gross inflation of prices which so astonished sane people during the past year? Certainly no variety of Potato ever raised was worthy the prices said to have been paid during the past year. All this booming and fooling of purchasers does no good in the end, but much harm, as only disappointment can follow when wonderful swans are after all found to be very common ducks. *A. Dean.*

FACTS AND FANCIES IN FORESTRY.—The other day, a forestry lecturer told a Carlisle audience, presided over by Sir Wilfrid Lawson, that "from 18 inches to 3 feet was the minimum depth at which they could plant forest trees." It is Brown, of course, who dwelt on the importance of "great depth," drawing erroneous conclusions from farm and garden crops. The above "minimum depth" at once rubs out most of the millions of acres of waste land proposed to be planted, for it may be safely asserted that a very small portion of our poor waste lands have more than 6 or 9 inches depth of soil, and the above "minimum" would appropriate all the deepest and best agricultural land. A few weeks earlier, Mr. Augustine Henry, lecturing on forestry also, at Castle Douglas, N.B., told his audience "that soil determined the species of trees to be grown, and that was about all. Forests grew where there was scarcely any soil. They knew of paying forests where there was nothing but bare, solid rock." Both extracts are from a Northern contemporary, and are characteristic of the old and new schools. I do not feel sure about the "bare rock" idea, but Dr. Henry is much nearer the mark, and apparently better informed than the Carlisle lecturer. It is simply astonishing where big trees of all kinds are found growing on solid rock with the scantiest sod over it—whinstone and granite rock, too—as in Cumberland, Kirkcudbright, and Aberdeen. Where I live, in the South Yorkshire uplands, over large tracts it is difficult to get a spade down deeper than 9 inches owing to the presence of solid rock, and the depth of soil is less than that in many places; yet all over this district once stood the finest Oak forests in Britain, described by Evelyn as probably "not excelled in Christendom," so straight and big were the trees. Other and later estate records testify the same thing, and plenty of fine trees show that the deep-soil theory is a pure fiction. *J. S.*

THE APPLE SELECTION.—To all your readers, native or foreign, this must have been of great interest. But to give a complete answer to the question, "What Apples shall we plant?" we must first know the merits and demerits of the particular varieties we intend to plant. I do not know any book on Apples that treats this matter fully. That excellent book, Hogg's *Fruit Manual*, is not a guide in this way. If you, Mr. Editor, would spare some space every week to the necessary complement of the census of Apples, written by your best pomologists or growers, I believe this would be of interest and great benefit to all fruit-growers. For instance, if Beauty of Bath is in many ways preferable to Irish Peach, which belongs to the best six dessert Apples, or Keswick Codlin to Ecklinville Seedling, because the last-named is too soft and very liable to spot, a comment is highly necessary. I should like to see the varieties judged in the following way:—1, fruitfulness; 2, growth, liability to canker and spot or otherwise; 3, quality, size, colour; 4, suitability for market or not; 5, kind of soil and position wanted. *B. G. van Heyst, Wyk-by-Duurstede, Holland.* [Our columns are open to the discussion of this and other practical matters, subject only to the limitations imposed by circumstances. ED.]

CHRYSANTHEMUM MRS. SWINBURNE AND ITS SPORT [see p. 28].—Although white-flowered Japanese Chrysanthemums are numerous Mrs. Swinburne is so distinct from all others that it is certain to become a popular variety, especially for late flowering. The florets are distinctly ribbed or fluted. They are semi-drooping, and build up a full solid flower that is at once attractive. The pearly-white colour is quite distinct from any other variety known to me. The yellow sport, Mrs. Beech, is an exact counterpart of its parent, except in colour. *E. Molyneux.*

HOLLYHOCKS.—I find the easiest way to procure an annual display of Hollyhocks is to plant at the end of March robust seedlings raised from seed sown in the previous May. Such plants can be bought quite cheaply in either single or double varieties, and if these are planted in deeply-dug and heavily-manured soil in an open position, and encouraged to grow vigorously, spikes of flowers 12 feet in length are easily obtained. After the flowering period is passed I dig up the plants and throw them away, as I find the second year they are quite useless, being smothered with fungi, and weakly in growth. As this system is so simple I do not trouble about the fungus, for during the first season of planting it does not affect them so far as their flowering is concerned, although a few of the lower leaves may be disfigured. Hollyhocks prefer an open position where they can have an abundance of air; overcrowding they abhor. Abundance of moisture at the roots during dry weather is a gain to growth, which cannot be too vigorous. I gave the singled-flowered varieties a good trial, but think them very poor and not nearly so effective as a Mallow in the border. I now grow none but doubled-flowered varieties. *E. M.*

MYROBALAN PLUM.—As a substitute for Quickthorn I also largely planted this Plum in Scotland, on the west coast—in fact, the west coast of the outer Hebrides—where the soil is of the poorest nature, peaty and wet, and the situation of terrible bleakness, being just on the seashore, and open to all the terrible north-west gales that sweep across the Atlantic. My experience is exactly the opposite to that of Mr. Duncan, mentioned on p. 29. Although planted in such an exposed situation, the Myrobalan often made shoots from 7 to 8 feet in length in one season. I have not tried the plant in England, but if I desired a quick-growing hedge I would without hesitation plant the Myrobalan Plum. It is ornamental as well as useful, and retains its leaves much longer than Thorn—at least it did so in the outer islands of Scotland, where the thermometer very seldom registered more than 3° or 4° of frost during the winter, but might not do so in places more inland. *Grigor Roy.*

—— I cannot agree with Mr. Ward that this Plum is superior to Quickthorn for hedging purposes, and my experience leads me to say that it is not nearly so good for hedges as a well-managed "Quick," though to see a well-cultivated hedge of the latter is indeed a rarity. This arises from two common mistakes, viz., the planting of double rows of plants 10 inches apart, and neglecting hard pruning at the start. The result is, under such conditions, a "thin" fence at the bottom, and one that occupies too much space. A single row gives much the best result. Plant three Quicks to every foot of ground, and prune them down to within 4 inches of their base when planted, and do not wait twelve months, as advised by Mr. Ward. I look upon this delay as a waste of time. The Myrobalan Plum will grow much more rapidly than "Quicks," but I have never seen a thick base to any hedge made with this subject. There are many persons who plant Quickthorn in a slipshod fashion, and then expect a quick growth; whereas if the site had been trenched and manured freely at the time of planting, the difference in the growth would have been perceptible. Too often the base of the hedge is allowed to become choked with weeds and grass, which not only prevent growth, but rob the roots of nutriment and moisture to an astonishing extent. *E. M.*

—— A few years ago I had charge of a place where an impenetrable fence was wanted to enclose part of the grounds. We trenched the ground 2 feet deep and about 18 inches wide, working in a quantity of good manure. In the autumn we planted the Myrobalan Plum about 6 inches apart zigzag in the rows, and the following autumn we cut the plants down to about 18 inches from the ground, in order to obtain a good foundation in the hedge. We trimmed the hedge annually, and also cleansed and mulched the plants with good manure every autumn; at the end of five years we had a thick impenetrable hedge 5 feet 6 inches in height. To prevent rabbits from attacking the plants, we used wire staked all round the outside of the hedge. I may state that cattle as well as rabbits and hares are fond of the plant. *A. R. Pearce, Kenilworth.*

—— My experience with the Myrobalan Plum differs somewhat from that related by correspondents on p. 29. Having to resuscitate several old fences here, I planted this Plum rather freely three or four years ago, and while it is distinctly useful for filling gaps and growing in an old hedge-bottom where Quicks will not grow, I should not think of substituting it for Quick in a new fence, or in portions of a hedge that can be cleaned out and trenched, in which case in my experience Quick or Quick and Holly have no equal. At the same time the Myrobalan is a useful plant in many places where the Thorn will not grow well, and associated with Privet will fill many an unsightly gap under trees and in wet, boggy land. I cannot say even with judicious cutting back that I have found it so impenetrable as it is described by Mr. Ward. *H. Jenkins, Acaster Malbis, York.*

APPLE WYKEN PIPPIN.—John Rogers, in his *Fruit Cultivator* (1834), mentions, as Mr. W. Miller does, the place of origin of this nice but now little grown dessert Apple as being near Coventry. Rogers states that he saw the original tree forty years previously, and that it was then in a state of decay. That would of course be long prior to Lindley's view of the tree in 1827, when it was merely an old trunk. Dr. Hogg writes of the flavour of Wyken Pippin in rather glowing terms, as delicious and first-rate. Rogers was content to say of it, "juice not abundant, but very agreeable;" but much would depend on the culture under which the respective fruits were grown. I had an old tree of the variety under my charge forty years ago, and it was then a splendid cropper, the fruits were of a suitable size for dessert, clean and handsome. We then thought it to be one of the very best-flavoured Apples. It is worthy of remark that when well matured the fruits keep well into the new year. It is a good Apple almost forgotten. *A. D.*

—— Mr. Miller may lament the preference for Worcester Pearmain over Wyken Pippin, but the fact remains that as a market Apple the latter is almost useless, while the former will realise probably more money than any other variety of Apple. Of course there are two ways of looking at Apples—for home consumption and for profit. For the latter purpose it is the showy varieties that are required, dull-looking fruit, no matter how good in point of flavour, is quite useless for sale in shops. Highly-coloured although poorly flavoured examples are freely purchased by the British public. *E. M.*

ORCHID NOTES AND GLEANINGS.

PLATYCLINIS (DENDROCHILUM) UNCATA.

A fine, healthy plant of this rare and pretty species is now in flower at Burford. When seen with only two or three spikes of flowers, there is little to recommend it; but the plant under notice, with about forty spikes of its graceful pendulous racemes, is one of the prettiest Orchids for use as a specimen for the table or drawing-room. The flowering racemes are about 10 inches in length; the individual flowers are small and numerous, and of a greenish-yellow shade. Coming from the Philippine Islands, one would naturally suppose that the plant would require the highest temperature available in Orchid-houses, but after repeated trials it has been found to thrive better if suspended in a cool, shady part of what is familiarly called the intermediate-house. In this house the foliage is not so liable to attacks of red-spider as it is when grown in a warmer temperature.

Cirropetalum Medusæ.

In the *Gardeners' Chronicle* for January 9, 1897, p. 25, a fine illustration was given of the Malayan Cirropetalum Medusæ, with eleven spikes of flowers. The plant is now again in flower at Burford, having fifteen equally good spikes. It is a curious and interesting species. The scapes are nearly erect, and bear upon their apex a large, dense, globose cluster of flowers, which are cream-coloured, freckled with pink, the two lateral sepals of each flower being so lengthened out as to give the spike the appearance of a head with very long, dishevelled hair. This species was introduced from Singapore by Messrs. Loddiges in 1841. The plant now in bloom has been in Sir Trevor Lawrence's collection since 1878.

Angræcum distichum.

A large, healthy specimen of this rare species is also in flower. The flowers are produced singly and in pairs from the axils of the imbricated leaves; they are small, but of snowy whiteness, and are very sweetly scented, especially at night. Altogether there are about a thousand flowers open on the plant, which forms a charming and attractive object in the warm-house. It is a native of the west coast of Africa. *W. H. W., Burford Gardens, Dorking, January 6.*

BOOK NOTICE.

THE CULTURE OF FRUIT TREES IN POTS. By J. Brace. (John Murray.) Price 5s.

This book, written as it is by a thoroughly practical fruit-grower, and one who has devoted the best years of his life to this particular branch of fruit-culture in the nurseries of Messrs. Rivers, contains within its 110 pages the very essence of pot fruit-tree cultivation, which is now, after a lapse of more than fifty years from its inception, becoming more and more appreciated by amateurs and by practical gardeners. The writer of this notice started this system of culture nearly ten years back with a prejudice against its practical utility for the actual supply of choice dessert fruits of various kinds, more especially for early forcing and for late supplies. He was soon convinced of his error in more ways than one, and is now a strong advocate of the system.

The author treats the subject in a plain and practical fashion and in such a way that it becomes not only interesting but most instructive. With the ease gained by experience he deals with the varied phases which fruit-trees in pots must pass through to ensure success. The opening chapter treats upon the houses and their construction, position, soils, &c., as well as with the cost of erection, which is essential. This is followed by the method of furnishing of the houses with trees. Here the caution against overcrowding should be particularly noted, and a word from the writer may not be out of place upon this subject, viz.—it is a fallacy to suppose that pot trees can be successfully grown from start to finish under the shade of other trees—started they may be, but a speedy provision must be made for light and air as soon as leaf-growth commences. The advice as to separate compartments and the advantages thus afforded is sound, and such compartments should wherever possible be provided.

The third chapter of the book should be read and re-read by everyone who contemplates this method of cultivation. It gives the best possible advice, which may be safely followed not only by those who are commencing, but by those who have already done something in this way. To the latter will be made plain the rocks upon which their expectations have been wrecked. The remarks upon the longevity of the trees should be specially noted. This is a point that the writer has frequently had to explain to enquirers who have erroneously supposed that the trees are short-lived, and he has pointed out trees, both of Peaches, Nectarines, and Plums, that have been forced continuously for ten years, and of Cherries for a somewhat shorter period. The chapter upon varieties might fairly have been extended, so as to have included those grand Nectarines Cardinal and Early Rivers, which are invaluable for early forcing, so also might that of Plums, especially of late kinds. Beginners and others should note the advice upon such a simple matter as "gathering the fruits"—it is sound.

The question of insects and their extermination is fully discussed in a clear manner. This is a matter which if once grasped will save infinite trouble and annoyance.

The calendar of operations for each month in the year for the unheated house is replete with sound advice, which the author in a future edition might well supplement with his practical knowledge of forcing. The plans given of suggested erections are explicit in detail, whilst the examples both of shoots as regards pruning, and of trees in respect to training are admirable. The author may be congratulated upon his work in general, and more especially upon the cultural details that he has so clearly laid down. The numerous illustrations add materially to the value of the work.

PLANT NOTES.

LOBELIA TENUIOR.

Now that the time for ordering seeds has arrived, I would say to those that may not have had the opportunity of seeing this charming species of Lobelia in flower, that it is exceedingly useful for conservatory decoration during the spring and summer months, and also for the draping of vases in the open garden.

The habit of the plant is slender and graceful, and it has lovely blue flowers with white centre, the individual blooms measuring 1½ inch in diameter. The plants grow 2 feet in height, and the profusion and duration of the flowers is remarkable. They close at night and open again in the morning, to all appearance with renewed brightness. *W. Fyfe.* [See illustration in our issue for January 19, 1901, p. 46. ED.]

REHMANNIA ANGULATA.

This new half-hardy herbaceous perennial plant grows well under the most simple culture, and is still in flower here. The flower-spikes measure upwards of 3 feet in length, and the plants continue to flower for months. *W. Fyfe, Lockinge Gardens, Wantage.* [See Supplement in our issue for May 9, 1903. ED.]

CARPOLYZA SPIRALIS.

THIS pretty little South African bulbous plant is seldom seen except in botanic gardens. It does not make a great show, but is interesting on account of the spiral twisting of the lower part of the thread-like flower-scape, the spiral probably being produced for the purpose of giving rigidity to the slender scape, which otherwise would hardly be able to hold itself erect. The bulb is oval, about ¾ of an inch long, and produces about eight dark-green filiform leaves from 4 to 6 inches long.

The scape is filiform, from 4 to 6 inches high, the lower half being spirally twisted, and of reddish colour; the upper half of the scape is quite straight, bearing an umbel of from three to six flowers on pedicels 1 to 2 inches long. The flowers are white, tinged with red on the outside, and are nearly ¾ of an inch in diameter. In the Cambridge Botanic Garden they are afforded the same treatment as Ixias and Freesias, seven or eight bulbs being planted in a 5-inch pot. They are now flowering, and prove interesting subjects for the cool greenhouse, where they last in good condition for several weeks. The plant is figured in the *Botanical Magazine*, t. 1383. It is also known under the genus Hessea. *E. J. Allard, Botanic Gardens, Cambridge.*

TACSONIA VOLXEMI.

In the Tacsonia Volxemi, first described and figured in these columns, we have one of the most beautiful conservatory climbers in cultivation. Its brilliant crimson flowers on long thread-like footstalks depending loosely from the roof trellis are everything that can be desired in a conservatory climber. It is easily raised from seed sown on any light sandy soil, covered to the thickness of about a quarter of an inch (the seedling being large) with some of the same kind of mould, placed in heat and watered. If the seed is good the young plants will appear within a fortnight or three weeks from the time of sowing. They should as soon as large enough to handle be placed singly in 3-inch pots in a mixture of four parts fibrous loam and one of leaf-mould, with a sprinkling of sharp sand added, returned to heat, and watered. Shift the plants into 6-inch pots before the roots become matted, and grow them on until about 3 or 4 feet high, when they should be planted out in a narrow, well-drained border or a 12-inch pot, training the growths loosely to the roof of a greenhouse or conservatory. The best compost is formed of three parts fibrous loam and one of peat with a good sprinkling of sand. When well established thin the shoots, but do not stop them. The plant may also be increased by cuttings put in in the ordinary way. *H. W. Ward.*

TRACHELIUM CŒRULEUM (BLUE THROATWORT).

This attractive perennial from the Mediterranean region belongs to the Campanula family. It is not only a very attractive border plant, but is also one that deserves to be grown in pots. It is a sub-shrubby branching plant from 20 to 30 inches high, producing in summer large clusters of pale blue flowers. Grown in pots, Trachelium cœruleum will compare favourably with Statice profusa, which plant it resembles in habit of growth, form, and colour of flower, either set up in a miscellaneous collection of plants in the exhibition-tent, or for the decoration of the greenhouse and conservatory. It is also a suitable plant for vases. It is easily propagated by seed, cuttings, or division of the roots. The latter is the best and certainly the quickest way of working up a stock, potting up the divisions in spring in suitable-sized and properly-drained pots, in three parts light loam and one of leaf-soil, with sufficient sharp sand added to render the whole somewhat porous. The plants should be afterwards grown on in a cold pit or frame like Spiræas and such-like plants, transferring them to the greenhouse in due time. *H. W. W.*

CULTURAL MEMORANDA.

LOBELIA QUEEN VICTORIA.

IN order to obtain a large stock of these plants for flowering well the first season, it is advisable to sow the seed earlier than is usually recommended, in order to allow the seedlings ample time to develop into strong plants before planting them in the open. When a good stock has been obtained, no difficulty will be experienced in keeping up the required quantity by division of the old plants. Sow the seed moderately thin in clean, well-drained pans, filled to within half an inch of the rim with good, fresh sandy loam, pressed moderately firm. Do not bury the seed too deeply, but cover the seed-pans with a square of glass. During the period when the seeds are germinating the soil must not be kept too moist. Place the pans in a moderate temperature near the glass until the seedlings appear, after which time the glass covers should be gradually removed. Prick-out the seedlings when large enough into other pans, and finally pot them singly in small pots to be grown-on and gradually hardened off prior to planting them in the open. Although with suitable convenience these plants may be raised later, I have always found it the better plan with perennials to sow early, and have the plants nicely forward before the sun-heat is too powerful. June and July are suitable months for raising these plants from seed sown in cold frames. *H. Markham, Wrotham Park, Barnet.*

LAW NOTE.

WITHDRAWAL OF AN APPEAL

UNDER SECTION 17 OF THE PHARMACY ACT, 1868.

NOTICE has been given of the discontinuance of an appeal from the decision of the Lord Mayor on August 8 last upon the three summonses taken out by the Pharmaceutical Society of Great Britain under Section 17 of the Act of 1868. The Lord Mayor then imposed three fines of £5, 1s., and 1s.; with five guineas costs to the Society, for selling XL-All Insecticide, containing nicotine, without the bottle being distinctly labelled "Poison." The other summonses were for selling to a person unknown, and for not making proper entry of the particulars of sale as required by Section 17.

COLONIAL NOTES.

TRANSVAAL PLANTS.

IT has occurred to me that some of your readers may be interested in the ornamental flowers of the Transvaal veldt, many of which, though apparently unknown in English gardens, are fully as showy and worthy of attention as many of the Californian species which are such old favourites at home. There is one important difference between the ornamental species of the two countries which may have something to do with the widespread cultivation of the one and the general neglect, if such it be, of the other. Those of California are largely annuals—Gilias, Phacelias, Collomias, Godetias, Eschscholtzias, and the like: those of the Transvaal are mainly perennials—often deep-rooted, and transplanted and grown less easily—Ipomœas, Vignas, Tephrosias, Lasiosiphons, Gomphocarpi, Eulophias, Gazanias, Dimorphothecas, Gerberas, and the like. Perhaps, as seems to be the case with those species of the genus Dimorphotheca already in cultivation, they need protection in an English winter; but I scarcely think that many of them would need greenhouse treatment, unless possibly to protect them from excessive moisture during the dormant season. On their native veldt, many of these plants have to stand winter-night temperatures of 22° Fahr. (10° of frost), and in some places as low as 7° Fahr.. (25° of frost) is recorded. The high veldt is mainly treeless, and exposed to the full sweep of bitterly cold winter winds; but at this period of the year the plants are naturally dormant, and their roots are deeply buried in the soil. Another condition which would be difficult to reproduce in England, and which might be necessary to successful cultivation, is the dryness of the long winter season, during which the plants remain dormant; during the past season over much of the Transvaal we had no rain heavy enough to wet the soil below 2 inches for over six months (April to October inclusive). When the November showers came, the tardy spring flowers appeared with a rush; many deep-rooted species did not wait for the rains however, but were able to flower early, probably owing to special structural arrangements and deep-rooting habits.

I hope to describe a few of our more showy perennials in subsequent letters. *Jos. Burtt-Davy, Government Agrostologist and Botanist.*

PLANT PORTRAIT.

ROSE MADAME NORBERT LEVAVASSEUR.—Stated to have originated as a cross between Crimson Rambler and Gloire des Polyantha, both forms of R. polyantha. The flowers are rich crimson-red. *Gartenflora*, January.

SOCIETIES.

ROYAL CALEDONIAN HORTICULTURAL.

The Annual General Meeting of the above Society was held in Edinburgh on Wednesday, 11th inst. The Council's report showed a very large increase in the number of entries both at the spring and autumn shows, that arrangements had been almost completed for the international show, and that the schedule which will be issued shortly will contain a number of new features not included in any show formerly held by the Society. In framing the schedule it had been the aim of the Council to endeavour to stimulate all branches of horticulture, whether cultural or in the domain of scientific investigation and experiment. The Council also reported that they intended shortly to revive the publication of papers dealing with horticultural subjects, which had been started in the early days of the Society, but shortly thereafter discontinued. The financial statement showed a successful state of affairs, the excess of income over expenditure for the year to November 30 last being £123. The Chairman, Mr. W. H. Massie, appealed to the members to endeavour to secure new members and to do all that was possible to strengthen the Society in view of the international show to be held in September. *P. M. T.*

SOCIÉTÉ FRANÇAISE D'HORTICULTURE DE LONDRES.

JANUARY 14.—The annual banquet of this Society, started sixteen years ago, with the object of bringing together and encouraging the young French-speaking gardeners who come to England to improve their knowledge of horticulture, was held at the Café Royal, Regent Street, on the above date, and was in every respect a decided success. M. Philippe de Vilmorin, who had come specially from Paris to preside, won the sympathy of all the persons who assembled to do honour to the Chairman, and to show their appreciation of the work done by the Society. After the loyal toasts, "The President of the French Republic" and "The King," the Chairman, in a vigorous and very concise speech, after reviewing the progress of the Institution, urged the young members to work with a will, and by their good conduct to strive to deserve the good feeling which, he said, is shown to them by the British nation in general and by their various employers in particular. He laid great stress on the benefit which they derive from their belonging to the Society, which is presided over by Mr. G. Schneider, whose time and experience are so generously placed at their disposal.

Mr. Schneider in reply to the Chairman's toast said that not only the Society placed young French gardeners here, but also made a special feature of placing young English gardeners abroad, and had been very successful in that respect. They had placed in France many of the young Englishmen who were present on this occasion. The Society is in a very flourishing condition, and this is largely due to the good fellowship existing between English employers and *employés*. He then read letters from Messrs. Léon Geoffray, Ministre de France, Dr. M. T. Masters, Harry J. Veitch, Cutbush, Geo. Nicholson, and Wm. Robinson, expressing their regret at being unable to be present on this occasion.

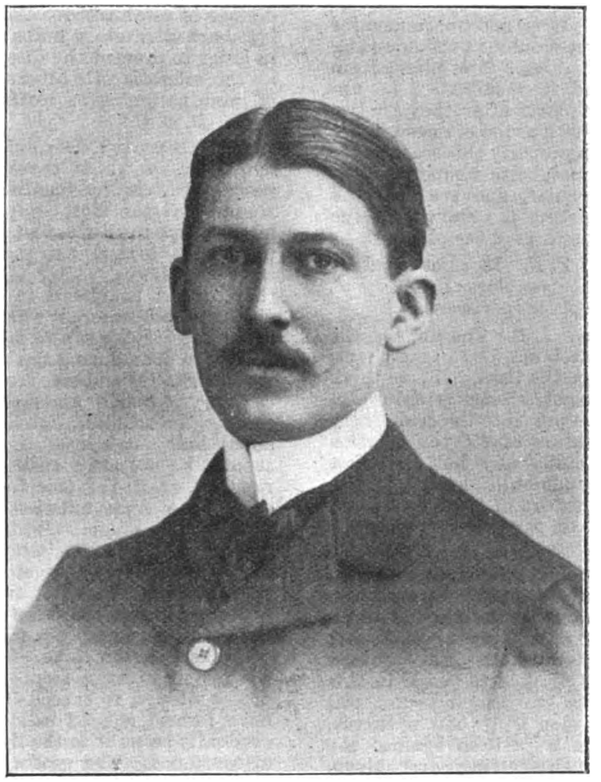
There were present a goodly number of members of the National Chrysanthemum Society, to whom young French gardeners are indebted for the present good position of their Society. Mr. C. Harman-Payne paid a just tribute to the illustrious family of De Vilmorin, a member of which was in relation with the Royal Horticultural Society at the time of the foundation of that Society in 1804; this was M. Pierre Philippe de Vilmorin, the Chairman's great-grandfather.

M. Edouard Sève, Belgian Consul-General, also addressed the company, thanking the Association for the great advantages which his young countrymen derived from their connection with it during their stay in this country. M. Alfred P. Huguenet, Directeur-Redacteur of the only French weekly paper published in London, *La Chronique*, also addressed the meeting. To that journal we are indebted for the opportunity of publishing the portrait of M. de Vilmorin.

One of the young French members, M. Serra, in the name of all his colleagues, thanked the Chairman for his devotion to their cause, and the English nurserymen and the English horticultural Press for their valuable help.

Mr. Geo. Gordon responded to this last toast. Among the company, which numbered seventy-nine, we noticed, besides the speakers, Messrs. Ed. Sherwood, T. Bevan, Percy Waterer, W. Howe, Brian Wynne, Hawes, Hiehle, E. Such, D. Ingamells, Collingridge, Withy, Tyler, Drost, R. C. Tucker, J. Gaskill.

Mr. G. Schneider announced the adhesion of many life members, also of honorary, titular, and correspondent members, and in appropriate terms cordially thanked his young friends for the handsome present which they made him on this occasion, and which he greatly appreciated.



M. PHILIPPE DE VILMORIN.

GARDENERS' DEBATING SOCIETIES.

BATH GARDENERS' SELF-HELP AND DEBATING.—The first smoking concert of the Bath Gardeners' Self-help and Debating Society was held on Monday, January 9, at the Foresters' Hall, Bath. Dr. Paton, one of the vice-presidents, occupied the chair, the meeting being well attended. During the interval a presentation was made to the chairman of the Society, Mr. Parrott, by Dr. Paton, who expressed his pleasure at the progress the Society was making. He felt that such meetings for social intercourse must in the end tend to benefit everyone who attended them. Mr. Parrott in response thanked the gathering heartily for the present and acknowledged the work of Mr. McLaren and Mr. Butt in the formation of the Society and the great help rendered by the Committee. Although only three months old the Society had a membership of 118, which he thought was excellent, but they hoped to double or treble that number by next year. Dr. Paton left at this stage, and Mr. Parrott presided during the rest of the proceedings. *O. G. McL.*

BATH AND DISTRICT GARDENERS' IMPROVEMENT.—The monthly meeting of the members of this Association was held on January 12, when Mr. W. F. Cooling presided over a satisfactory attendance. Excellent exhibits of fruits and vegetables were staged, while prominently placed on the table was a beautiful bunch of Iris stylosa from the open-air, a remarkable fact, considering the time of the year. In the usual competition held, prizes were awarded to Mrs. Tollemache for a collection of vegetables, and to Mr. R. B. Cater for Primulas. Mr. Curtis gave an address, the subject of which was "Stove Plants."

CARDIFF GARDENERS.'—The opening meeting of this Society for the new year took place at the Sandringham Hotel on Tuesday, January 10, Mr. Tom Clarke presiding. A large gathering attended to hear a lecture entitled "The Twelve Best Vegetables to Grow for Exhibition," written by Mr. E. H. Battram. Unfortunately this gentleman was too unwell to attend, and in his absence Mr. John Julian was asked to deliver a lecture entitled "Some Hints upon the Selection and Staging of Fruits and Vegetables for Exhibition," which he had previously delivered to the members of the newly-formed Bassaleg Cottagers' Association. Mr. Julian gave many valuable hints on exhibiting, and gave reasons why exhibits were ofttimes either successes or failures. Mr. H. R. Farmer opened a discussion, which was well taken up by the members. *J. P.*

BRISTOL AND DISTRICT GARDENERS'.—The fortnightly meeting of the above Association was held on Thursday, January 12. Col. Cary Batten, the President, opened the proceedings, addressing a few words to the members and congratulating them on the progress the Association was making, and hoped it would be maintained. It was always a pleasure to Mrs. Cary Batten and himself to pay the Society a visit. Mrs. Cary Batten then presented the prizes which were awarded the successful competitors for three plants in bloom. On Col. Cary Batten leaving, Mr. W. A. Garaway was invited to take the chair for the remainder of the evening, and he then called upon Mr. Binfield to read a paper on "Decorative Plants," which dealt with the method of the cultivation of Palms, Crotons, and Poinsettias, the formation of suitable composts, the method of potting, the most suitable temperature, and the general treatment to observe in their cultivation. A discussion followed. The next meeting of the Society will take place on January 26, when Mr. Woodward, member of the Newport Association, will lecture on "The Rotation of Kitchen Garden Crops."

CHELMSFORD AND DISTRICT GARDENERS'.—At the weekly meeting of the above Society, held on Friday, January 13, Mr. Alger Petts presiding, Mr. W. Seabrook gave a paper on "Apples." He referred to the enormous sums paid yearly to the foreigner for fruit that might well be produced at home. He advocated the dwarf system of growing Apple-trees, especially the bush and cordon methods, the pyramid plan of training being somewhat adversely criticised. An ideal Apple soil was in his opinion a sandy-clay. He advised planting trees on a hillock rather than deeply, as deep planting was often the cause of failure, and loss of trees. Mulching in May in preference to winter mulching was advised. Among all the 1,000 or so varieties of Apples Mr. Seabrook thought ten varieties of good table, and ten good culinary Apples were all that were required. In buying and selecting trees for planting the speaker warned his hearers against purchasing cheap trees from afar. He advised buying the best that were procurable in the district from reliable growers. *S. M. C.*

SOCIAL EVENING AT KEW.—The Kew Gardeners' Social was held on Friday, January 13, in the Boat House, Kew. About 150 guests assembled and spent a very pleasant time. Mr. H. J. BAKER was Master of Ceremonies, and to Mr. G. H. PRING, the Secretary, the thanks of the meeting were also due.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending January 14, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
JANUARY 8 TO JANUARY 14.	At 9 A.M.		DAY.	NIGHT.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	40	39	47	37	28	41	43	44	Tot 0·13	3	31

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Jan. 14, is furnished from the Meteorological Office:—

"The *weather* during this week was mostly fair in the south and east of England, and unsettled elsewhere. Heavy rain and a little snow were experienced in the north of Scotland, and a considerable amount of rain in Ireland and the north of Scotland. During the 11th a thunderstorm, accompanied by hail, occurred at Leith.

"The *temperature* was above the mean, the excess ranging from 1° in Scotland, N., and England, S.W., to 2° or 3° in the other parts of the kingdom. The highest of the maxima were recorded at the beginning of the week, and the lowest of the minima at its close. The former ranged from 54° in Ireland and the Channel Islands, to 51° in Scotland, W., and the latter from 21° in England, S., and the Midland Counties, to 30° in Ireland, and to 32° in the Channel Islands.

"The *rainfall* was much more than the mean in Scotland, N., and a little more in Ireland, but elsewhere there was a deficit. In the Channel Islands, and in England, S.E. and N.E., the fall was very slight.

"The *bright sunshine* was very abundant in England, the Channel Islands, and the East of Scotland, but only just equalled the normal in Scotland, N., and was below it in Scotland, W., and over Ireland. The percentage of the possible duration ranged from 50 in England, E., 35 in England, S., 33 in the Channel Islands, and 32 in England, N.E., to 12 in Scotland, N., and to 8 in Ireland, N."

THE WEATHER IN WEST HERTS.

A Bitterly Cold Wind.—The recent spell of very mild weather lasted eleven days, when a change to lower temperatures took place. On the coldest day, the 16th, the highest reading in the thermometer-screen was 29°—making it the coldest day as yet of the present winter. During the previous night the exposed thermometer showed 15° of frost. The last few days and nights of cold weather have already affected the ground temperatures, which are now about 1° colder at 2 feet deep, and about 3° colder at 1 foot deep, than is seasonable. The only fall of rain or snow worth mentioning was that of the 16th. On the evening of that day the ground was covered with snow to the mean depth of half an inch. This coating was, however, mostly melted by the rain and sleet which were afterwards deposited during the night. The measurement of rain and melted snow on the following morning amounted to nearly half an inch. One effect of the rain falling upon the frozen ground was to bring about what is termed a "glazed frost," or "silver thaw," which caused the roads and pathways to become very slippery early on the following day. On all but one day, when the soil was frozen, some water passed through both percolation gauges during the week. The sun shone on an average for nearly three hours a day, or for more than twice the seasonable duration. On three consecutive days the mean daily record was nearly 5¼ hours; but two other days were altogether sunless. On two days in the early part of the week the wind rose in the windiest hour to 17 miles—direction west. The most noteworthy feature was, however, the biting easterly winds of the 15th and 16th, which from 10 A.M. on the 15th until 9 P.M on the 16th blew with a velocity of from 7 to 15 miles an hour. It was not, however, so much the strength of the wind as its low temperature and extreme dryness which caused it to feel so excessively cold. The mean amount of moisture in the air at 3 o'clock in the afternoon was as much as 13 per cent. less than the average quantity for midwinter at that hour. *E. M., Berkhamsted, January* 17, 1904.

ANSWERS TO CORRESPONDENTS.

Aucuba japonica: *Cabbage.* You are right in supposing the flowering growth to be that of A. japonica. It is a green-leaved variety of this species, and the flowers on the growth received are female flowers. This shrub, as its name denotes, is a native of Japan.

Bone-manure: *T. T. T.* Crush the bones as finely as you can, and apply in that state. Although the manurial properties of the bones are not so soluble as when treated with sulphuric acid and converted into superphosphate, their effect is felt for a much longer period in soil.

Books: *Hortus.* We know of no suitable up-to-date work on the subject of table decorations. Old books on table decoration deal with old-fashioned methods, and are next to useless.—*W. F.* *Elementary Botany* by Percy Groom, M.A., price 3s. 10*d.*; and *Chemistry of the Garden*, by H. H. Cousins, M.A., price 1s. 1½*d.*, post free, from our Publishing Department.—*J. W. M.* Mendel's *Principles of Heredity*, by W. Bateson (Cambridge University Press); *Journal of the Royal Horticultural Society* (1900), vol. xxv., parts 1 and 2; also a paper by C. C. Hurst, to be had from Thornley & Waddington, of Leicester.

Calanthe Bulb Spotted: *F. L.* The brown markings on the pseudo-bulbs sent are superficial, and do not extend to the tissues. It is probable that condensed moisture on some occasions when the temperature of the house has fallen rather low may have caused the damage. When grown from the same stock for a number of years the plants are liable to degenerate, and show similar disfigurement to that on your specimens. During the resting period keep them in a structure where ventilation is employed. Repot the pseudo-bulbs when they have commenced to make growth. If the stock does not improve get fresh pseudo-bulbs.

Chrysanthemum: *Nurseryman.* We see no fungus on your cuttings at present, but there are indications which seem to point to the future development of the fungus. Watch them carefully, and apply liver-of-sulphur ½ oz. to 2 gallons of water, in the form of spray. This will do no harm, and if fungus be really present it will do good.

Cucumber Plants Diseased: *Reader.* A thorough investigation has failed to reveal the presence of any fungus or insect pest, and the plants are from this standpoint perfectly healthy. No mention is made of the plants having been sprayed or exposed to vapour of a fungicide, but the bleached edges of the leaves and the colour of the green parts point very strongly to injury from vapour or spraying, which has killed the more susceptible plants.

Cyclamens: *Beginner.* It is not uncommon for very old corms to cause trouble at the flowering season. You should raise a few plants from seeds each year, and it would then be unnecessary to keep the plants after they are two or three years old. With a view of encouraging the flowers to develop properly this season take care to keep the atmospheric temperature of the house pretty regular, and see that the proper degree of moisture is obtained in the atmosphere and at the roots of the plants.

Cypripedium insigne. *T. B.* It is not usual for this plant to produce two flowers on a spike, though we have seen other specimens.

Dendrobiums Failing: *J. D.* Judging by the pseudo-bulbs of Dendrobium Wardianum sent, which are decayed on the basal half, we think that the growths were not sufficiently matured in heat before they were put into the cold vinery to rest. The temperature of 45° you mention would affect prejudicially any but the most perfectly-finished pseudo-bulbs, and it is possible that the temperature of your house has fallen even below 45° on particular occasions.

Maidenhair Ferns on Walls: *A. S.* The back wall appears to be the more favourable site for growing your Ferns; a situation beneath the front staging and close to the dry-heat radiating from the hot-water pipes would not appear to be at all favourable. But you are on the spot, and better able to judge in this respect. With regard to keeping the soil on the wall, a good plan is to obtain turves, and secure them in a position against the wall by stretching wire-netting over them. You can introduce pieces of peat, &c., beneath the netting and thus form an excellent nidus for the plants. The whole need not protrude more than an inch or so from the surface of the wall. You will need "battens" at intervals on which to fasten the wire-netting. This is a cheap and ready method, and one that can be performed by yourself. If your employer is willing to bear the expense, and wishes for more elaborate work, there are firms who will cover the wall with a kind of rock-work, with "pockets," &c., suitable for planting the Ferns. This system would produce a better effect.

Names of Fruits: *H. A. R.* 1, Cox's Orange Pippin; 2, Dumelow's Seedling (Wellington); 3, Ribston Pippin; 4, Lincoln Pippin.—*W. D.* Miller's Glory.—*J. H.* 1, Uvedale's St. Germains; 2, Tardive de Mons; 3, Striped Beefing.—*Derby.* 1, Queen Caroline; 2, Old Hawthornden; 3, London Pippin; 4, not recognised from the deformed fruit received; 5, Castle Major; 6, Warner's King; 7, Greenup's Pippin; 8, Tower of Glamis.

Names of Plants: *C. J., Sussex.* Epidendrum atropurpureum, commonly called Epidendrum macrochilum album in gardens.—*A. R.* 1, Oncidium tigrinum; 2, O. varicosum; 3, Phalænopsis speciosa; 4, Stanhopea insignis; 5, Zygopetalum maxillare.—*Formosa.* 1, Pteris cretica; 2, Adiantum gracillimum; 3, Pellæa rotundifolia; 4, Selaginella cæsia.—*H. N.* 1, Probably Cedrus Deodara; 2, Cryptomeria japonica; 3, Cupressus thyoides; 4, Abies Nordmanniana; 5, Sequoia gigantea (Wellingtonia); 6, Thuya orientalis variety.

Notice to Leave: *Ignorance.* It might only be necessary to give a week's notice in your case; but as you are paid fortnightly you would be better advised to give a fortnight's notice.—*Clifford* and *J. R. R. G.* It is usual to give and receive a month's notice, but as no agreement exists and you have been paid weekly, a week's notice is all you can claim. In the case of a head gardener the requirements would be different, and longer notice would be required.

Onion Disease: *G. T.* The diseased Onions with the crowns blackened and rotten are in a condition that is far too common. The disease attacks almost any kind of bulb, especially those of Hyacinths and Onions. In your case small lumps or "sclerotia" are being formed in the rotting parts. In the following season they would produce a small Peziza, called Sclerotinia bulborum (see *Gardeners' Chronicle*, vol. xvi., 1894, p. 160). There is no cure when the disease is established. All that can be done is to burn all diseased bulbs which can be found, in order to prevent the disease from spreading, as the sclerotia will hibernate, and be capable of germination after resting for two or three years. *M. C. C.*

Seedling Oranges: *Constant Reader.* There are two ways in which these fruit-trees can be propagated, viz., by budding and by grafting. Budding is the most simple plan, but should not be done until the first week in July. The process is identical with that of budding fruit-trees and Roses. After the trees are budded they should be placed in a somewhat shady position and watered whenever necessary in order to cause the sap to flow freely. Grafting should be done during the first or second week in March. The best kind of grafting for Oranges is "side grafting." Cut down the trees to the required height, and select a scion about half the size of the stock. The scion should be securely tied to the stock with worsted, or if the tree forming the stock is extra large some untwisted soft string may be used to advantage. Bast or raffia should on no account be used. Grafting wax sufficient to cover the top of the stock and scion should be applied to the graft in order to keep out water. The grafted trees should be kept in a close place, preferably a pit, and shaded whenever there is sunshine. The temperature of the pit may range from 40° to 45°, but must not be allowed to exceed 50°. After the grafts have formed a good callus the trees may be gradually brought to the light and the shading discontinued. The grafts need not be untied until the autumn, unless the tying material is found to be cutting into the stock. If you intend to use your seedling trees as stocks it will be necessary to obtain scions of good varieties from a nurseryman. Probably Messrs. Rivers & Son, Sawbridgeworth, would be able to supply you. *J. B.*

Stands for Grapes: *G. W. W.* The recognized size for Grape stands is as follows:—12 inches at back, 1 inch at front, and 12 inches at base from back to front. The width of the board is generally left to be determined by the exhibitor, according to the size of the bunch or bunches.

Tree Carnations: *A Beginner.* See the note on this subject in the weekly Calendar "Plants under Glass," on p. 38.

Vegetable trays: *G. W. W.* The usual size of the trays for exhibiting vegetables are as follows:—For six kinds, 4 feet by 4 feet; for nine kinds, 5 feet by 4½ feet; and for twelve kinds, 6 feet by 4½ feet.

Communications Received.—G. S.—J. Clayton (with thanks)—J. V. & Sons—W. C. & Son (we await Mr. B.'s letter)—R. N.—Hans Gussow (with thanks)—National Horticultural Society of France—Lady G.—G. H.—Lady H.—S. W. F.—J. McB.—A. A. Wilding—Cecil Hooper (enclosure).—W. G. S.—G. A. M.—W. D.—J. H.—Young Gardener—H. A. R.—L. E. W.—S. P.—A. B. S.—W. & J. B.—Harrison Weir—T. B.—J. T. B.—H. W.—R. D.—F. J.—C. J. E.—J. O'B.—A. D.—S. W. F.—T. H.—A. B. W.—T. H. C.—C. F., Warmington—A. M.—L. R.—D. Bliss—W. W.

(*For Markets see p. xiv*)

THE
Gardeners' Chronicle

No. 944.—*SATURDAY, Jan.* 28, 1905.

CONTENTS.

Apple census, the ... 58
Araucaria at Dropmore, the famous ... 59
Benevolent Institution, Gardeners' Royal 56, 62
Book, notice of—
  A Gardener's Year ... 52
British Gardeners' Association, the... ... 58
Camellias at Leyswood 57
Cedrus Deodara var. alba spica 59
Chrysanthemums for greenhouse decoration 53
Conifers as reclaimers of waste lands ... 49
Cryptomeria japonica . 59
Fires at country houses, the danger of 58
Gardeners, the training of young 59
Gilbert's, Sir Henry, library 58
Hampton Court Vine, the 58
Horticulture, examinations in 57
Kew Hand-Lists ... 58
Kylemore Castle, Co. Galway 50
Market gardeners' visit to Paris 52
Massachusetts Horticultural Society ... 58
Orchid notes and gleanings 53
Plants, new or noteworthy—
  Stapelia divergens ... 49
Rainfall in Co. Kilkenny 59
Riviera, frost on the ... 58
Societies—
  Gardeners' Debating p. xiii.
  Ghent Chambre Syndicale 62
  Society for Horticultural Science ... 63
  Linnean 57
  National Potato 56, 61
  Royal Horticultural 59
Statice fruticans ... 59
Vegetables, forcing of.. 51
Week's work, the—
  Flower garden, the... 55
  Fruits under glass ... 55
  Hardy fruit garden... 55
  Kitchen garden, the . 54
  Orchid houses, the... 51
  Plants under glass ... 55
Winter flowers in the south-west counties 54
Wood-ripening on fruit trees 59

ILLUSTRATIONS.

Camellia-house at Leyswood, Groombridge, Kent, view in the (Supplementary Illustration).
Chrysanthemums arranged to form a bank of flowers on a staging 53
Kylemore Castle, Co. Galway 50
Phormium tenax in the gardens at Kylemore Castle 51
Waterfall in the grounds at Kylemore Castle ... 51

CONIFERS AS RECLAIMERS OF WASTE LANDS.

PERHAPS there is nowhere a more desolate and uninviting piece of land for planting than the many hundreds of acres now lying waste in the mining division of Cornwall. Between Truro, Hayle, the Bristol Channel, and Mount's Bay, and eastward from it, extending in a zigzag line almost to Falmouth, there lie indications of mining operations which have been carried on from time immemorial. The more modern workings appear the more desolate. The ancient, either by Nature's own hand or by human agencies, have become covered by vegetation. The newer workings are at present unmistakable. Some of the valleys have proved capital dumping places for the *dêbris* hauled up from the adjacent mines. In others this waste has been conveyed some distance from the shaft's mouth and thrown into great heaps known locally as "burrows." This *dêbris* consists chiefly of varieties of granite of several different shades and textures. "Elvan" and slaty formations are also met with and excavated from these vast subterranean mines. In addition to these broken rocks there are huge burrows of ashes, cinders, and other foreign material. These all go to account for the colour in the landscape, so that on a clear day there may be seen a feature which is not altogether sombre. In this parish (Gwennap) there is at least a square mile where there is not a single plant growing! In other places there may be seen solitary specimens of Calluna vulgaris, species of Ericas, and Gorse; and these appear first where the ashes from the engine-boilers were thrown, then on the elvans and on soft clayey material which is washed out of the granite.

In 1864 E. Beauchamp-Beauchamp, Esq., came into possession of Trevince, which was at that time in the centre of a copper and tin mining industry. He at once fenced in about one hundred acres of wretched stone-bestrewed and in many instances, so far as plant-life goes, poisonous mine-land, and planted Scotch Fir, Larch, Pinus austriaca and P. insignis. Spruce were not planted with the above-named species, as is usually done. Now it must be remembered that disintegration and decomposition go on at various rates, that rain falling washes away iron and copper in solution (by the way, the average rainfall here for seventeen years is 42 inches), and that frost does its part in breaking down these materials to form soil. The plants were planted when about one foot high. Curiously enough, those taken from the seed-bed started to grow sooner, and a smaller percentage of them died than of those that had been previously transplanted. The ground was not dug or any preparation made for planting beyond driving a pick into the ground three times to make a triangular loosening; after this the plants were put in behind the spade. Those planted forty years ago have now reached heights varying from 40 to 55 feet. It must have taken some courage to plant what was literally a "howling wilderness." To-day there is a fine game covert and a splendid shelter. Thinning has been carried out sparingly around the sides, but more thoroughly in the centre. Pontic Rhododendrons have been planted as an undergrowth by the hundred, and in May and June an acre of these plants in bloom is a sight not soon forgotten. Various shades of colour are found among them. Seedlings are to be found in thousands growing in the sides of cuttings which used to be watercourses, and a smaller number on flat ground. These are taken up and planted in the nursery and grown on until they are about 2 feet high. The Pine leaves, the leaves of the Rhododendrons, and the decaying parts of the other plants (Ivy, Heaths, &c.) have assisted the atmospheric agencies to such an extent that what was once a wilderness has indeed become a garden.

There is no doubt whatever that this land, when this crop of wood is taken off (with, of course, the necessary levelling of the smaller burrows), will become good agricultural land in a much shorter period than if this *dêbris* were left to atmospheric agencies alone. When such a transformation takes place, one is led to question the causes which have contributed to it. The soil—if soil it can be called—is about the last that a planter would choose. Where rocks are mechanically broken up, there will always be bits which are extremely angular, and the question is: Do these edges—some of them sharp, and hard enough to cut glass—induce roots to increase in number? If this is so, this, with increased facilities to take up food dissolved out of the granite, will account for the success attending these plantations.

Narrow belts of trees are not advised, because of the prevalence of strong winds; it is better to plant a considerable area if possible. The last piece planted here is triangular, and measures 21 acres. Larch from about thirty years old and upwards are usually decayed in the middle; when felled, you may pull out handfuls of spongy, fibrous material from the centre of the trunk. Whether this is due to the soil, or a disease of the plant itself, is a question for older planters than the writer. The younger trees make excellent poles for fencing, &c. None of the other species show any signs of disease; they all produce good timber. *H. W., Trevince.*

NEW OR NOTEWORTHY PLANTS.

STAPELIA DIVERGENS, N. E. BROWN (*n. sp.*).*

THIS is a very distinct species, belonging to the same group as S. variegata, and is very similar to it in the general appearance of the stems, although the flowers are quite different, the unspotted rim of the annulus and the widely divergent tips of the outer coronal-lobes being very characteristic marks of the species. It seems to be a rare plant, as I have only seen it twice—the first time about fifteen years ago, and this autumn it has flowered in the garden of Sir Thomas Hanbury at La Mortola, from which latter plant the description in footnote is made.

---

* *Stapelia divergens.*—Stems 1½—3 inches high, often decumbent at the base, 4-angled, ¼—½ inch square, glabrous, green or purplish; angles rounded, with conical, spreading teeth, 1¼—1½ line long, usually with a minute denticle on each side of the acute withering tips. Flowers 1—4 in a fascicle, successively developed near the base of the young stems. Pedicels 1—1¼ inch long, glabrous. Sepals 2½ lines long, 1 line broad, ovate-lanceolate, acute, glabrous. Corolla, when in bud, shortly conical, acute, from a broad, flattened 5-angled base; when expanded about 2 inches in diameter, nearly flat, with a raised central annulus, very minutely ciliate with simple hairs all along the lobes, otherwise glabrous on both sides, slightly rugulose on the inner surface; lobes about 9 lines long and 7 lines broad, deltoid-ovate, very acute or acuminate, light yellow, labyrinthically marked on the lower two-thirds (as well as on the disc of the corolla) with thick, irregularly-ramified brownish-crimson lines, the markings on the apical part becoming broken up into spots; annulus about 1½ line high, nearly circular, with a horizontally spreading (scarcely recurved) rim, bright canary-yellow, marked in the basin-shaped rugulose depression with rather crowded small round brownish-crimson spots, which are absent from the smoother rim, underneath the margin of which is a crenated band of connected brownish-crimson spots. Outer coronal-lobes ascending-spreading, 2 lines long, 1 line broad at the base, 2—2½ lines broad across the tips of the two subulate, straight, widely divergent points into which they are divided for two-thirds of their length, pale yellowish, dusted with dark crimson-brown on the points, with a triangular spot at the base of the notch and a square spot of crimson-brown at the base. Inner coronal-lobes 2-armed, pale yellowish, dusted with dark crimson-brown; outer arms 1¼ line long, erectly spreading, compressed-filiform, very slightly thickened (not distinctly clavate), and very minutely tuberculate at the apex; inner arms 2 lines long, filiform, clavate, and minutely tuberculate at the apex, connivent at the base, then erect with recurving tips. Origin unknown; probably a native of South Africa. *N. E. Brown.*

KYLEMORE CASTLE.

THIS edifice, one of the seats of his Grace the Duke of Manchester, is situated in the heart of Connemara, Co. Galway. It is about 175 miles from Dublin, whence the visitor must proceed by the main line of the Midland and Great Western Railway of Ireland as far as Galway, and thence by the Company's branch line to Clifden, the capital of Connemara. The Castle is situated in a beautifully chosen position at the foot of the Doughruagh Mountain, and stands on a wide terrace at the north-west corner of Lough Pollacapul, the site commanding a remarkably grand prospect of Kylemore Pass, being bounded by a majestic amphitheatre of mountains, the acclivities of whose sides slope to the water's edge of the loughs beneath.

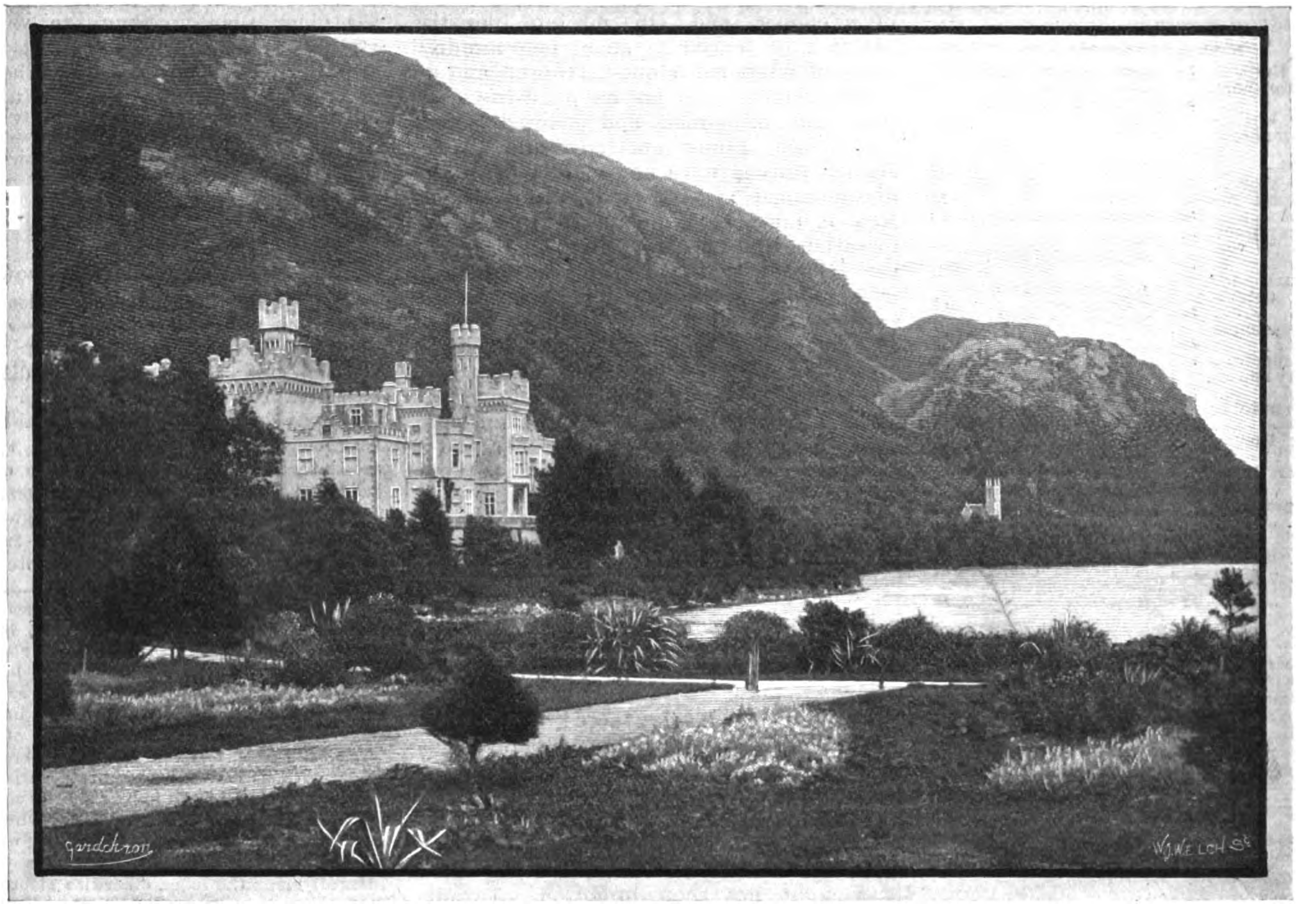


FIG. 25.—KYLEMORE CASTLE, CO. GALWAY.

The Castle is in the Scottish baronial style, and has its principal façades faced with cut Kingstown granite. The policies are intersected by a winding carriage-drive about 2 miles in length, traversing in its course the lower portion of a beautiful hanging wood rising and falling in succession by easy gradients, and skirting in its course Loughs Pollacapul and Maladrolaun, and bordered for the entire distance by a great variety of Rhododendrons and other ornamental shrubs, interspersed with clumps of Pampas Grass and New Zealand Flax. The two last-named plants grow most luxuriantly, the deep, free, bog soil, combined with a mild temperature and humid atmosphere, suiting them admirably, as it also does other comparatively scarce ornamental plants. We measured one clump of Phormium tenax, grown from a single plant, and found it measured 21 feet in diameter and 10 feet 4 inches in height, while on one plant of Pampas Grass we counted fifty-five plumes or panicles. There are two distinct varieties of the Pampas Grass at Kylemore, the well-known Gynerium argenteum, and a seedling variety that flowers a month or six weeks earlier than the ordinary form.

Amongst the shrubs we noted the following: Berberis stenophylla, one specimen of which measured over 11 feet in height and 20 feet in diameter; Escallonia macrantha in great profusion, and a variety said to be E. coccinea, a specimen of which measured over 12 feet in height and over 15 feet in diameter. There are also good specimens of that attractive evergreen shrub, the shore-loving Griselinia, G. littoralis, the specimen we measured being over 15 feet in height. Euonymus latifolius, Olearia Haastii, Arbutus Unedo, Acacia dealbata, Leycesteria formosa, Hydrangea Hortensia, H. H. stellata prolifera. &c., are all growing in profusion and in good form.

Immediately to the east of the Castle, on a lawn in front of a large orchard-house, we noticed a fine specimen of Cordyline australis, 22 feet high; there is also a good example of Eucalyptus robusta, 50 feet high. The Blue Gum (Eucalyptus Globulus) was not planted here till 1896, but specimens about 3 feet in height planted at that time have already attained a height of 15 feet. On this lawn we also noticed a fine specimen of Phormium tenax variety, turned out of a pot only three years since.

Skirting the main avenue, and a little to the west of the Castle, is the pinetum, planted on a piece of reclaimed bog land; and here a great variety of Conifers is in excellent condition. The different varieties of Cupressus Lawsoniana have been planted freely, and are of heights varying from 15 to 30 feet. We found a specimen of Cupressus gracilis pendula measuring 20 feet; a fine, healthy plant of Abies polita measured over 21 feet, whilst a specimen of A. ajanensis was found to be 18 feet in height. Cryptomeria elegans, Retinospora plumosa, and R. p. aurea are also represented by specimens 10 to 18 feet high, and furnished with branches to the ground. A striking feature at one end of the pinetum is a clump of hybrid Rhododendrons, 72 yards in circumference and 20 feet 3 inches in height at the centre.

Among the varieties of the taller coniferous trees planted alongside the avenues and throughout the grounds, Pinus insignis, P. austriaca, and Cupressus macrocarpa form the leading features. None of these have been planted more than thirty years, but some of them are fine specimens considering their age. One tree of Pinus insignis which we measured was found to be 8 feet 9 inches in girth at 3 feet from the ground, and numerous specimens of Cupressus macrocarpa are from 40 to 50 feet high, many of which are laden with cones.

The gardens are situated about a mile westward from the Castle, and are intersected by a broad walk or carriage drive. The flower-garden consists of two gentle grass slopes on either side of the central walk, and these are laid out with flower-beds in several geometrical designs, and interspersed with specimens of Pampas-Grass, Gunnera manicata, tall permanent plants of Cordyline australis 15 to 30 feet in height, Aralia chinensis, A. Sieboldii, Hydrangea Hortensia, and H. H. stellata prolifera. Space forbids going into detail, but we noted some of the leading features. At the date of our visit in the second week in September several small circular beds of Sedum spectabile at once arrested the eye, they were one mass of rosy-pink colour, and the symmetry of the beds was perfect. A large oblong bed of Fuchsia Rose of Castile was also very pretty. These plants had not been moved for several years, and as a consequence were fine specimens, and were smothered with flowers. Several beds of Fuchsia Monarch (a dark self), growing under similar conditions, were also very effective. Two isolated beds of Veronica Andersoni var., permanently planted, were pretty, they had been smothered with their pale blue flowers, but their rich, creamy, variegated foliage was sufficiently telling of itself. Four large L-shaped beds, planted alternately with Anemone japonica and A. j. alba, were full of flower. A bold effect was produced by a large crescent-shaped bed filled as follows—the back with Hydrangea Hortensia, the centre with Dahlia Glare of the Garden, and the whole edged with Chrysanthemum Golden Shah, Lobelia cardinalis, Begonias, Pelargoniums, Gladioli, &c., were all planted with good effect. Florists' flowers included collections of Roses, Carnations, Pentstemons, &c.

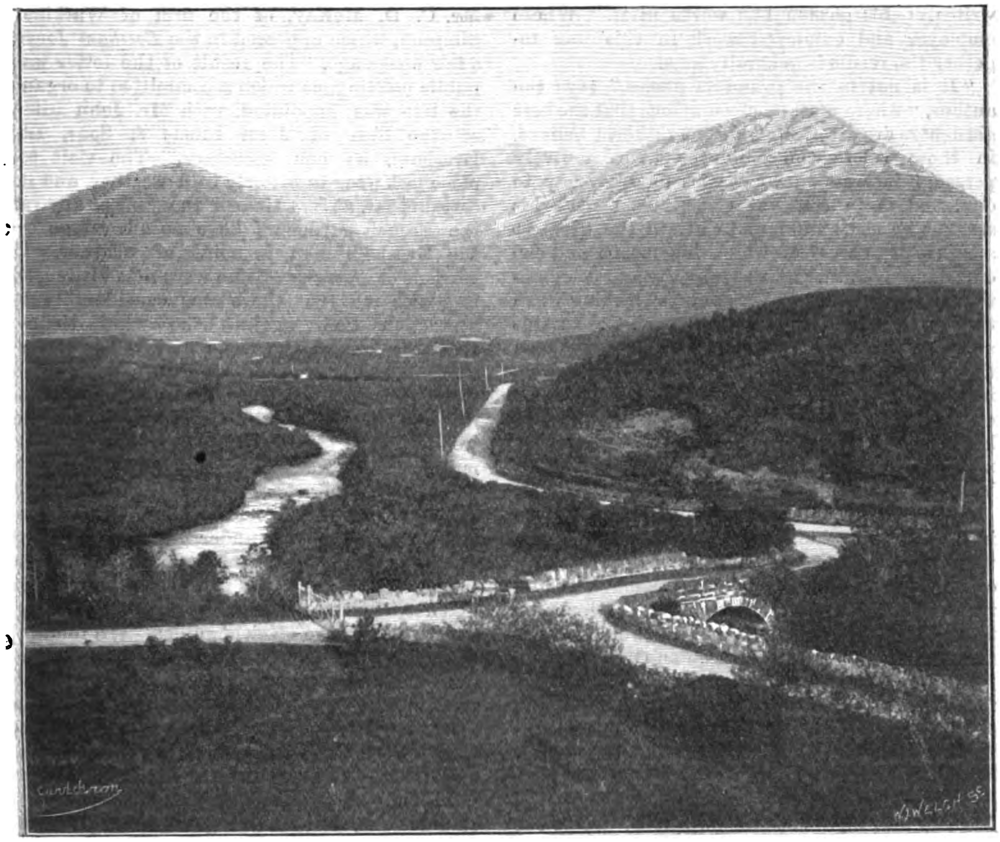


FIG. 26.—THE WATERFALL IN THE GROUNDS AT KYLEMORE CASTLE.

The glasshouses, which number over twenty, are spacious and well furnished. In the Palm-house we noticed healthy specimens of Kentia Belmoreana and K. Fosteriana, Phœnix rupicola and P. reclinata, Latania borbonica, Euterpe edulis, &c., whilst the side stages were well furnished with such subjects as Hippeastrums, Dracænas, small Palms, large, well-flowered specimens of Cypripedium insigne, &c.

In a lofty conservatory were fine specimens of Sabal umbraculifera, Dicksonia antarctica, Strelitzia Reginæ, Camellias, &c., the rafters being furnished with climbing Roses, Plumbago capensis, Pleroma macranthum, Bougainvillea speciosa, &c. In this house we also noticed a batch of Streptocarpus of fine strain.

The Banana-house, which measures 72 feet by 26 feet, is well stocked with healthy plants of the ordinary variety Musa Cavendishii, these being planted in a bed along the centre of the house. The plants were fruiting freely. The rafters were furnished with such subjects as Clerodendron Balfourianum, Cissus discolor, Begonia President Carnot, several varieties of single and double Hibiscus, Allamandas, &c., whilst the side stages contained a miscellaneous collection of stove plants.

A lofty span-roofed plant-house had the central stages entirely filled with plants of a good strain of carefully-selected single and double Begonias, whilst the side stages were entirely occupied with Malmaison Carnations, which looked the picture of health.

The corridors connecting the various houses were well furnished with climbers and other plants; the former embraced Acacia Baileyana, Clianthus puniceus, Begonia grandiflora, Swainsonia galegifolia, Pleromas, Tacsonias, Roses, &c.

Two lofty cool ferneries had their back walls covered with Ferns and Mosses, the body of the house being treated with real rockwork, forming arches and other designs and planted with a variety of Ferns, foliage Begonias, &c., interspersed with specimen Palms and Tree Ferns. A span-roofed stove contained a good collection of Codiæums, Caladiums, winter-flowering Begonias, Pandanus Veitchii, &c.

Of fruit-houses there are a considerable number. One vinery was chiefly filled with Muscat of Alexandria Grapes, the canes bearing a good crop and the fruit well finished considering the external atmospheric conditions. Another vinery, 90 feet in length, contained the varieties Mrs. Pince's Muscat, Royal Muscadine, Royal Vineyard, Madresfield Court and Gros Maroc. A lofty house had a very good crop of Black Hamburgh, and a companion house was filled with young healthy plants of Bowood Muscats.

Peaches and Nectarines are grown in quantity, many houses being devoted to these fruits. The crop was partly gathered at the time of our visit, but the samples we saw were of excellent quality. The varieties of Peaches grown are Prince of Wales, Princess of Wales, Noblesse and Royal George, and of Nectarines, Milton, Downton Improved, Stanwick, Elruge, Byron, Violette Hative and Pine-apple.

In the Melon-house a good second crop was being gathered, and in the centre of this house we noticed good specimens of Begonia Gloire de Lorraine and B. Turnford Hall, also a collection of Codiæums, Caladiums, &c.

A large Tomato-house was furnishing an excellent crop. The variety Stirling Castle is chiefly grown for ordinary purposes, but the Peach Tomato is largely used for dessert.

There are extensive and well-stocked kitchen-gardens, and an orchard; also a long herbaceous border in the kitchen-garden containing an up-to-date collection of this deservedly popular class of flower. There are also fine hedges of Escallonia macrantha, and of a variety of Fuchsia; the latter is said to be F. exoniensis. We did not recognise it, but it is certainly distinct from F Riccartoni, although of the same type. Both in the grounds and alongside the neighbouring highway there are miles of this Fuchsia, forming a source of much pleasure.

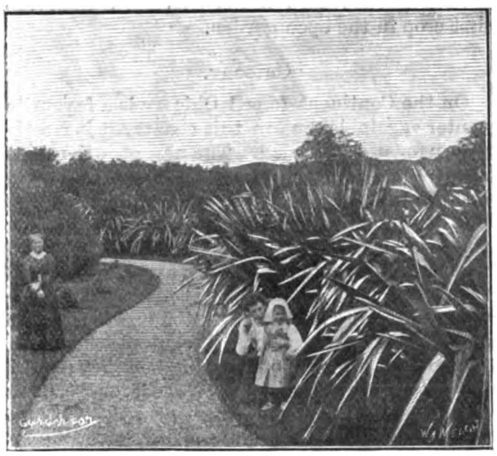


FIG. 27.—PHORMIUM TENAX IN THE GARDENS AT KYLEMORE CASTLE.

Mr. Wm. Comfort, the head gardener at Kylemore Castle, is naturally an enthusiastic horticulturist, as he is descended from a race of gardeners; and his four brothers, like himself, all followed their forefathers' calling. *C.*

SOME NOTES ON FORCING VEGETABLES.

(Concluded from p. 36.)

French Beans are more costly to force than Asparagus, and from December until the end of January the returns that can be obtained from them are not worth the space they would occupy. This at least is so in this part of the country, but near the coast better results may be possible. The plants require much sun-heat in addition to artificial warmth, and sun-heat is very scarce in January. I have frequently had more pots in January than pods, and yet every care was taken to secure a crop. With the lengthening days there will be a better chance, and the plants will give a really good return. The present is a good time to sow seeds in pots or heated pits for furnishing supplies in early spring. Choose a quick-growing variety and one that produces pods of good size. In many gardens pots are used largely, and they are convenient, but where a pit with bottom-heat can be spared for the purpose the plants crop grandly. It may not be necessary to sow the seeds in their growing quarters, as if sown in small pots and planted out afterwards they succeed well. We sow seeds every week from now until the end of April or even later.

Peas.

All gardeners cannot spare space for the cultivation of Peas in frames or pots, and the return is not equal to that yielded by Beans, at the same time if a good variety for forcing is chosen the crop is an appreciable one. For years, when I had a limited quantity of glass only at my command, I grew this crop at the front of a Peach-house, and got a good return, the variety being American Wonder. Now there are much better varieties, such as Chelsea Gem, Sutton's Ideal, and May Queen. We also find Carter's Daisy a most valuable forcing variety, though a little later than those named. It is a splendid cropper. There is a great gain by growing a dwarf Pea in frames, as grown thus the plants are near to the glass. Peas will not stand severe forcing, for if too much heat be employed the haulm becomes weakened at the base and doubles over. For culture in frames or pits seeds sown now will give a good return a month earlier than the first crop in the open garden.

Chicory.

On the Continent forced Chicory is a favourite winter vegetable, but in this country it is mostly grown for use as a salad. The new growths when about 4 inches long, before the leaves expand or open out, are the portions used. Chicory needs but little forcing. If put in a dark place where there is an atmospheric temperature of 50°, this will be ample; and I have seen excellent samples that have been cultivated in cellars. The roots used for forcing are grown in the previous season and stored in a cool place till required for forcing. In the southern part of the kingdom they require but little protection; the Witloof or Brussels Chicory gives a much finer growth than the common or Barbe de Capucin.

Roots.

Under this heading forced Carrots and Turnips are important spring crops, the former requiring a longer time to mature, but both are much appreciated when grown quickly. We get our earliest supplies from heated frames, but these are not of the best quality; the best are grown in hot-beds largely composed of leaves, as these retain their warmth a longer time, and on the beds we place frames. The latter part of January is a good time to make up beds. Avoid using too much bottom heat; far better place the heating materials in bulk for a time, and, by frequent turnings over, allow the rank steam to escape. Sutton's Inimitable Forcing Carrot is the earliest I have grown; it is a small, globe-shaped root, and of most delicate flavour. Early Nantes and Early Gem are both good forcers, but any kind grown under glass should be sown thinly and in good soil.

Turnips mature quickly and need but little warmth. If given very much heat top growth becomes too rapid, and the roots suffer in consequence. In France these roots are largely forced for supplying the Paris markets; the long roots, not unlike a large Radish, find most favour for early supplies. We grow Carter's Early Forcing and Sutton's White Gem; these are much earlier than the globe-shaped roots, and though not so good for keeping, they are valuable for cultivation in frames and warm borders.

Potato culture under glass should now be given attention, and in many gardens the tubers are grown in pots. *G. Wythes, Syon House Gardens, Brentford.*

BOOK NOTICE.

A Gardener's Year: By H. Rider Haggard. Illustrated. (Longman, Green & Co.) 8vo, pp. 404, 12*s*. 6*d*.

As week by week the substance of this book was issued in the pages of the *Queen*, we could but be struck with its superiority to the ordinary productions of a similar class. Indeed since the publication in our columns of Mr. Bright's "Year in a Lancashire Garden," the parent of so many other like works, we have not come across a book which, judged from a gardening point of view, is so satisfactory. It does not profess to be a textbook, but it is a clear and thoughtful record of the author's doings during the year 1903.

It starts with an introductory chapter descriptive of the garden, its adjuncts and of the author's co-workers. We use this expression because it is evident that the writer not only writes of his garden but works in it. Where employer and employed work in this way together the result is generally good.

"It is not in the grandest places," says the author, "where most money is spent, that the best gardeners are always found, but rather, I believe, in those where the employer takes a lively personal interest in what goes on from day to day, and is in constant consultation with his servant or servants, how to attain the greatest measure of success of which his means and circumstances admit. Thus sympathy and co-operation are established which are often lacking when the bond is one of money alone. . . . In this matter they become friends, the link between them being the welfare of the plants and flowers in which they take an equal pride, and the result of that friendship is on the part of the master kindness and consideration, and on the part of the man, service, not of the lip or eye, but of the heart. Would that it were thus in every business!"

Although the general principles of cultivation in the case of Orchids are the same as those which, with the requisite modifications according to circumstances and special requirements, should regulate the growth of plants in general, yet we find Mr. Haggard saying that he would rather hire a man who had never seen an Orchid than a "new head who 'understands Orchids'! Better far take a novice who is willing to learn and train him." This savours of sarcasm, but it illustrates our statement that the author is a worker as well as a writer.

After this exordium we begin with the first of January and we are conducted day by day to the end of December. Each day's operations are recorded, with occasional comments and thoughtful remarks, which betoken not only the garden-lover but the accurate observer. The year 1903 was, it will be remembered, one of the most dismal on record, and for fruit absolutely the worst, and yet the author found his garden "as delightful as ever to work and wander in, and even to describe." With such a spirit it is no wonder that the gardener found his garden in better order than it was at the beginning of the year, and that good progress was made. We should like to make several extracts from this delightful book, but space, or the want of it, compels us to refrain. We must, however, indicate the passages relating to Kew, to the Temple Show, to Messrs. Protheroe & Morris's auction room, as specially interesting to readers at a distance.

Like most people, Mr. Haggard girds at the names given to plants, whether in scientific jargon or in misleading vernacular. Indeed, the book shows that in this one particular the proofs have not been revised, or we should not read of "Eremuri Robustus," "Aralia Chinensis Pyramidilis" (whatever that may be), "Vandas Teres," "Angræcums Eburneums," and other similar distortions.

We have little doubt but that a new edition will be called for, and that will afford the opportunity for correcting these minor flaws. The plant described on p. 242 as belonging probably to Sarraceniaceæ seems rather to have been a Drosera or Sundew, such as often makes its appearance in the sphagnum. The book is prettily illustrated, has a good index, and may be commended to the garden-lover as a most serviceable and suggestive guide.

MARKET GARDENING.

EVESHAM GARDENERS' VISIT TO PARIS.

The visit of a party of Evesham market gardeners to Paris last week cannot but have a beneficial effect upon this industry, not only in the Vale of Evesham, but throughout the country. The idea was started in a letter from Mr. C. D. McKay, of the firm of Watkins & Simpson, which appeared in the *Evesham Journal* a few weeks ago. The result of the letter was a public meeting, at which a committee to organise the trip was appointed, with Mr. John Idiens, of the firm of John Idiens & Sons, Ltd., Evesham, as hon. secretary. The visit took place last week in bitterly cold weather, and it is certain that, at this time of the year at any rate, the French gardeners have no advantage over the Evesham men in point of weather. The gardens of Vitry-sur-Seine were first visited, and it struck me that there was considerably less protection here against the wind than at Evesham, where the hills and woods form a natural wind-break. Most of the Vitry gardens, which are small, are enclosed by stone walls, and it is odd that these walls are not utilised, as they would be in Evesham, for fruit-trees. As a matter of fact, we saw no fruit trees at all. Our object in visiting these gardens was to get an insight into the way the Frenchmen grow Lettuce and other vegetables under glass, to supply the Parisian and London markets. In this we were successful, thanks to the trouble Mr. McKay had taken to ensure that we should go to the right districts and have efficient guides. We found the French gardeners most willing to give us all the information in their power, and thus we learnt a great deal. The growing of these Lettuce does not seem to be a very complicated matter, and depends, after all, upon the preparation of the seed-bed, at which work the Frenchman is a past-master.

The natural soil of Vitry is not so rich as that of Evesham, but it has gone through such a prolonged period of preparation that it is next to impossible to find any natural soil. The system adopted is as follows: all the top soil is removed from the spot where it is intended to form the bed, and then a thick coating of stable manure is placed therein. Upon this again is placed a coating of the prepared soil, and then the Lettuce are planted. As soon as the crop has been cleared, the whole of the manure and soil is taken away, made into mounds and allowed to thoroughly rot for a year or more and is then used again as the prepared soil. From this it will be understood that the work of providing suitable soil is continually going on.

The frames in which the plants are grown are about 13 feet long and 4 feet 6 inches wide, standing 9 inches at the top and 7 inches at the bottom. There are three lights, and we were told that the cost of the whole is about 13*s*. They can be secured for less money in England, and indeed any man with a knowledge of rough carpentry could easily make the frames during the winter months. The frames are filled with the Cabbage or flat Lettuce, and those we saw last week were in various stages, so that when one batch is cleared another lot will be coming on. Radishes and Carrots are also grown in the frames, and these will be ready in rotation after the Lettuce. There is no artificial heating of the frames except that which is provided by the manure, and the lights are covered with straw mats, which are made by elderly men and boys in the gardens. These mats are composed of Rye straw, and are exceedingly well made. Similar ones might with advantage be introduced into Evesham for the purpose of covering Radish-beds and frames, thus replacing the loose straw and the dirty bags which are so untidy and wasteful. Cos Lettuce are grown under cloches or bell-glasses, of which we saw a very large quantity. They are transplanted three times. In the first place, six or ten are placed under a cloche, and then when they have made sufficient growth half that number is taken away, and at the last move one only is placed under the bell-glass, but so that no space shall be wasted each is surrounded with four of the flat variety. Water is essential, and this is supplied by means of a large tank in each garden, whence it is distributed to all parts of the garden. The expense of sinking a well and laying down a pumping apparatus would not be necessary in Evesham and many of the villages round, as the public supply would be available at a small yearly outlay. Ventilation, too, is very necessary, and early Lettuces can only be procured by the exercise of constant care and attention.

One of the gardeners told us that his outgoings on a garden of not more than 2½ acres was £600 a year, and few of our local gardeners have such a heavy outlay. Despite this, and of the fact that the freight from Paris to London is about 80*s.* a ton, as compared with about 25*s.* from Evesham, they are able to supply the London market at a profit. The Frenchmen have no advantage over us in point of soil or, if last week be taken as a criterion, in climate. They may score off us in that they have stable-manure nearer to them; but they have to fetch it from Paris, 8 miles, and Evesham could easily obtain it from Birmingham and London. What a pity it is that our waterways have become derelict! for the canals and rivers would be most useful for the carriage of this stuff and for lowering of railway rates.

In one of the gardens we saw an Asparagus-bed where the roots were all exposed to the weather—a very different system to that usually carried out in the Evesham neighbourhood, where the plants have been bedded-up for some time. The French beds will soon be covered up, but before this is done the roots will be covered with a coating of stable-manure, and then the soil will be replaced a little at a time. The crowns we saw certainly looked very strong, and were of great size. The system in vogue is to plant the beds when the plants are two years old, and not when a year old as here; to let them lie idle for a year, and to start cutting when they are four years old, and not three as at Evesham. The practice of exposing the roots and manuring them has been carried out with great success by a few gardeners round Evesham, but it is by no means general.

One great point which impressed itself upon all who paid the visit was that it is no use producing a crop unless it is sent to market in an attractive form. The markets at Paris and Covent Garden were visited, and the Evesham men there saw how their foreign and English competitors beat them in the packing and grading of their produce. This has long been one of the failings of the Evesham grower. No one can get better crops from the land, but in consequence of careless and untidy packing the produce very often fails to realise anything approaching its value.

It is hoped to organise further trips to the fruit districts of France, Germany, Belgium, and Holland, and arrangements are in progress for the first visit, which will be to the Black Currant district of France about the middle of May. These Currants are one of the most remunerative fruit crops if a good yield be obtained, but the bushes bear so seldom that comparatively few are grown round Evesham. We are told that under the system employed in France failure is the exception; so let us by all means find out how it is done. *One of the Party.*

CHRYSANTHEMUMS.

I AM sending you a photograph (fig. 28) showing our Chrysanthemums here. The stage is about 2 feet 6 inches from the ground, and there are hot-water pipes under it, therefore the only way we can manage to display our Chrysanthemum-plants is to tie them down to form a bank. Some of the plants were 7 feet high, and all over 5 feet this season. We have to bend them down to cover the pots, then slope them up to the glass at the back, which would be about 2 feet 6 inches from the stage. It is a delicate task to tie them down, as the growths are apt to snap; but anyone having a stage like ours may profitably tie the plants similarly when they are in flower. There are 100 pots. We generally put two plants in a pot, or three in 12-size pots, in case one plant should break in the bending; and it is easy then to lay a plant each way, so that the colours may be mixed. *W. C. Smith, Ecton Hall Gardens, Northampton.*

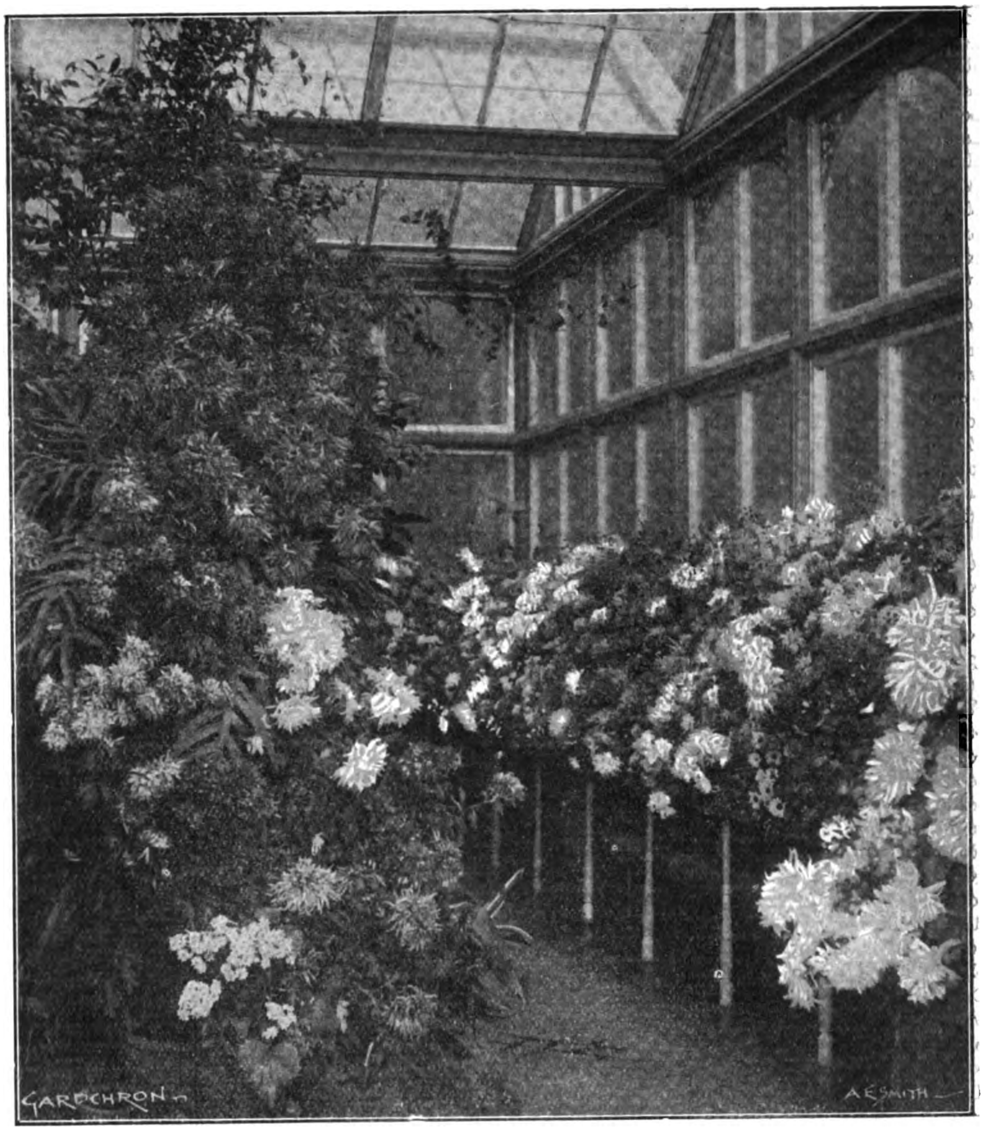


FIG. 28.—TRAINED CHRYSANTHEMUMS.

ORCHID NOTES AND GLEANINGS.

CATTLEYA LABIATA SPLENDENS.

A VERY large and richly coloured flower of Cattleya labiata is sent by F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, who remarks that it is by far the best of its class which he has seen. The sepals are broad and flat, and the crimped-edge petals rather over 2½ inches in width. Both sepals and petals are of a bright rosy-mauve colour, with a small silver-white base to each segment. The side lobes of the lip are of the same colour as the petals, the broad front being ruby-purple. There are fine yellow lines on the reddish base of the lip on the inside. It is a very excellent form, and few flowers can compare with it for bright colouring at this season.

"THE ORCHID REVIEW"

for January gives a general summary of the events of the past year, so far as they concern Orchidists. Mr. Wrigley denounces the fog fiend from Bury, so that it is evident that growers in the neighbourhood of London are not alone in their grief. Mr. Francis Wellesley and Mr. Rolfe contribute jointly a very interesting paper on Cypripedium (§Paphiopedilum) Fairrieanum, its history and the hybrids derived from it. We await the continuation of this note with interest.

WINTER FLOWERS IN THE SOUTH-WEST.

FLOWERS in the open-air are few in the dull days of winter, and such blossoms as greet us in dark December are welcomed with a delight that would doubtless be much modified, if not altogether absent, did they attain perfection amid a host of floral beauties in sunny June.. A few, however, are lovely enough to hold their own against strong competition, and dwellers in the favoured south-west are often enabled to admire, in the depth of winter, the beauty of the blossoms of tender shrubs and plants that in colder districts would perish in the open-air.

Christmas Roses, with their extended period of bloom, have provided flowers uninterruptedly for many weeks, commencing with Helleborus altifolius or maximus towards the end of October, and continuing with their various forms, such as the Bath, the Riverston, and the Brockhurst varieties, then the two forms of H. angustifolius, or St. Brigid's Christmas Rose, Apple Blossom, and Madame Fourçade, some of which will blossom well into February, when the Lenten Roses will commence their display. From November onward the Winter Jasmine (J. nudiflorum) has graced rock, trellis, and arbour with a golden maze of slender, flower-laden shoots. The Winter-Sweet (Chimonanthus fragrans) was in flower at Christmas. When trained against a wall, as is generally the case, it has no decorative value, and is only useful for providing its sweetly-scented flowers for the house; but in the south-west, where it is often grown in bush-form in the open, it is attractive. One specimen, growing on a lawn and backed by a spreading Yew, is 8 feet in height and as much through, and is a pretty sight when in full flower, the pale yellow blossoms, borne in profusion, showing up well against their dark setting. In the same garden is another example that is fully 15 feet in height, and has formed a small tree with a spreading top.

In the first week of January the Glastonbury Thorn, of legendary lore, opened its first flowers; but this is sometimes in bloom as early as November. Some of the shrubby Veronicas, especially a handsome variety bearing rich rose-crimson flowers, have been in bloom through the entire winter, and in January a few scattered blossoms, white and red, still remained on Lapagerias growing against north walls. Every morning as I look out of my window I see the yellow flower-spikes of Cytisus racemosus, though some twenty miles distant large bushes have been completely killed by 18° of frost. Three days before Christmas I picked the first flowers of Clianthus puniceus from the open wall, but the earliest blossom of the white variety, growing hard-by, will evidently not expand for another month. The white variety of Daphne indica is in flower, and in another week Prunus Davidiana alba will expand its first blossom. The quaint Hamamelis arborea, to my mind the most decorative of the Witch Hazel family, has perfected its curious flowers, the narrow petals of which before they expand look like rolls of ribbon, and when open have the appearance of twisted strips of gold-leaf. With even the smallest shoots thickly set with these singular flowers, a bush is a very attractive sight.

Lonicera fragrantissima, a bush Honeysuckle, has every shoot crowded with small, ivory-white, sweetly-perfumed flowers. This will grow to a height of 6 feet, and with the Prunus and Hamamelis, is perfectly hardy. Coronilla glauca, in full flower in November, retained many of its blossoms until after the New Year, but the last flower-head of Eupatorium micranthum, better known as E. Weinmannianum, faded in the second week in December, and the flower-panicles on the great bushes are now covered with fluffy grey down. Garden banks are bright with colonies of Cyclamen Coum and its varieties, deep rose, pale pink, and white.

In the first week of January the Winter Aconites showed their flowers, on a dull day globes of gold set in Elizabethan ruffs of foliage, but in a sunny hour widely expanded. The lovely Algerian Iris stylosa or unguicularis is perhaps our most valuable winter blossom, for, from the end of October until the close of March, scarcely a day passes when buds on the point of expanding may not be cut for indoor decoration. These flowers are as welcome for their fragrance as for their beauty, and it is difficult to know which to admire most, the lavender type, the white variety, or the purple speciosa. The plants are most abundant bloomers, a clump a foot across producing fully 200 blossoms in a season. Crocus Imperati opened its first flowers a week before Christmas; it is as great a gem as the autumn-flowering C. speciosus, and is doubly valued for producing its blooms in mid-winter. The tender colouring of the flowers, lavender-mauve within and buff striped with deep purple on the outside, is very pleasing. The charming little Ionopsidium acaule is never out of bloom with me. Self-sown seedlings spring up in the borders, paths and walls, and are never interfered with, except to introduce a fresh occupant to the beds. The Winter Heliotrope (Tussilago fragrans), grown in an out-of-the-way corner, where it interferes with nothing, has provided its scented flowers for the house for many weeks. The first of the Snowdrops has appeared, and Clematis balearica or calycina, clambering over a tree, has displayed the first of its greenish-white flowers spotted with purple in the interior. Small bushes of Agathæa cœlestis still hold some dozens of flowers, and a stray blossom or two are to be found on great plants of Arctotis aspera arborescens, Mesembryanthemum aurantiacum, and the Cape Pond-weed (Aponogeton distachyon). Next month, to all appearance, Acacia dealbata and Erica lusitanica or codonodes will be in flower. *S. W. Fitzherbert.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn. East Sheen, S.W.

Chysis bractescens.—These plants having rested in a cool part of the Cattleya-house since the last pseudo-bulbs were developed, now that growth is again apparent should be afforded treatment accordingly. As soon as the new roots are being emitted, any repotting that is needed should be performed. They should be put in pans having about an inch of drainage, using a root medium of two parts peat to one of semi-decayed Oak-leaves and sphagnum-moss, to which should be added some silver-sand and small crocks to keep the whole porous. The above compost should occupy about a third of the pan's capacity, finishing the surface with peat and sphagnum-moss in the ordinary way, so that none of the leaf mixture is exposed. Suspend the pan in a light part of the warm-house for a couple of months, returning the plants after that period to the Cattleya-house, in order to complete their growth. Give water very sparingly for some considerable time after there has been root disturbance, and do not wet the young foliage. C. aurea, with other species and hybrids, need similar treatment to C. bractescens.

Cypripediums.—Though most Cypripediums are of easy cultivation, some species, such as those of the C. concolor section, with C. Drueryi, C. Stonei, C. Sanderianum, and hybrids related to them, offer considerable difficulty. C. concolor, C. niveum, C. Godefroyæ, and the variety leucochilum, should be given a position in the warm-house where it will not be possible for drip or water from any source to lodge in their leaves. The compost around the roots should be kept moderately dry, and when water is needed the receptacle should be immersed nearly to the rim only, taking great care to keep it from the leaves. C. bellatulum will thrive best suspended in the temperature of the intermediate-house. C. Drueryi and the others mentioned need the warmth and moisture of the East Indian-house, and must not be allowed to remain dry for more than a day or two at a time. Many kinds are now in a suitable condition for being potted or top-dressed, and this work may be taken in hand before the needs of other species cause a certain amount of pressure. If the plants are to be repotted, pick out as much of the old material as is possible without disturbing the roots and drainage, and substitute fresh compost. Use moderately large pots, and make them one-half full with drainage material, or even more than half-full in the case of large receptacles. Work the potting materials amongst the roots, distributing the roots towards the sides and surface as much as possible. Make all moderately firm, and finish off the surface neatly, just below the rim. It is not possible to name all the species that need attention, but any plant that flowered during the autumn may now be overhauled. The rooting medium may be composed of peat and sphagnum-moss in equal parts, selecting lumpy peat from which little of the fine particles has been shaken. Loam fibre may be added for some kinds, such as C. insigne, C. villosum, and C. Rothschildianum, and their varieties; but in or near large towns its use is more harmful than otherwise. Nor is leaf-soil recommended for many sorts, though such as C. Curtisii, C. superbiens, C. callosum, C. Mastersianum, and hybrids of like affinity make good progress in a compost which includes a small quantity of leaves. An intermediate temperature and moist sweet atmosphere suit most of the sorts, and it is important that the plants be protected from draughts. Having no pseudo-bulbs, the plants need a certain amount of moisture at the roots at all times; but following the disturbance of repotting and during the winter months the application of water should be carried out with extreme care. Spray the plants overhead in the morning on all favourable occasions.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage,

Jerusalem Artichokes.—If these tubers are not already lifted this work should now be done, and as the soil is at present in good working condition, the seed-tubers for next year's crop may now be planted in ground that has been well prepared. If these vegetables are given a favourable position they will be of much better quality than when grown with strong manure in some out-of-the-way corner. Plant in rows 2 feet 6 inches apart and at a distance of 18 inches apart in the rows. The white variety is much superior in quality to the old purple one.

Cauliflowers.—We are now potting the seedlings raised from the seed sown early in November, using 3-inch pots for the purpose. The young plants must be kept near to the glass, and for the present allowed a temperature of about 45° to 50°. The varieties are Early London, Walcheren, and Autumn Giant. Seeds may also be sown of Extra Early Forcing Cauliflower, of Superb Cos Lettuce, and of Leeks. The last-named should be sown as advised for Onions, with the exception that the pots for the Leeks should only be half filled with soil, in order to add more soil as growth advances. The variety Lyon is of superior quality and of large size. We have only recently finished cutting Cauliflowers after a long and constant supply. Varieties valuable for their compact form and delicate white heads are Early London, Walcheren, and Sutton's Christmas White. Snow's Winter Broccoli has also proved exceptionally serviceable, and is now available for cutting.

Improving the Soil.—Readers may understand better the practice adopted here if I convey an idea of the nature and composition of the soil in the kitchen-garden at Lockinge. When it was brought under cultivation for that purpose some thirty-four years ago, it was of a poor, white chalky, pasty nature, some 6 inches in depth, with 9 inches more of solid white chalk, resting upon a chalk-rock foundation. Deep cultivation therefore as generally understood was impossible until additions had been made of similar soil from the neighbourhood, and of manure and burned garden refuse, leaves, &c. The average depth of the soil at the present time does not exceed 2 feet, but by adding leaves during the last ten years in much larger quantities, and by applying less strong manures, the appearance and character of the soil has been changed from a light to a much darker shade of colour. Being more porous, the soil permits a freer access of air, and is therefore a better medium for the roots of plants.

Change of Manure.—It being of the utmost importance that manures of different types be applied alternately, we find that the use of air-slacked lime in considerable quantities upon our cold, freely-manured soil becomes not only an important fertiliser of the soil, but it tends to destroy insects.

Digging is an almost daily operation, of great importance, and should be done well; but we do not find it necessary to trench the ground oftener than once in six years. Not until the third year after trenching do we attempt to grow such crops as Carrots, Parsnips, and Beetroot, because of the numbers of fanged roots that would be produced. When the soil becomes more settled the roots go fairly straight down to the decayed and decaying substances at the bottom of the trench, and are much more regular in shape and finer in quality.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant, Oxon.

Cherry-trees trained as Cordons must not be grown too vigorously, otherwise the fruit will be liable to drop. Varieties of Cherries best suited to this mode of culture are May Duke, Archduke, Royal Duke, Guigne d'Annonay, Reine Hortense, Empress Eugénie, Guigne de Winckler, and Morello. These should always be "worked" on the Mahaleb stock, as they are much more fruitful on this than on the Cherry stock, and form more compact and fertile trees if kept well pinched. The Mahaleb stock exerts a similar influence on the Cherry scion as the Paradise stock does on the Apple. The Mahaleb ungrafted forms a very ornamental tree, and is very effective when planted as a single specimen on the lawn, its peculiar habit of growth and the perfume given off by the small white flowers in the spring being very attractive.

Morello Cherry-trees, if not already trained, should be given early attention. The pruning and tying of these trees, growing as they do on the north side of the wall, being extremely cold work, should always be performed in the autumn, as the work can then be done in much more comfort, and with more thoroughness. The Morello Cherry produces its fruit on the wood made during the previous summer. The leading branches of the tree should radiate from the main stem, and all intervening space on the wall should be filled with the strongest fruit-bearing wood. The trees should be carefully pruned, cutting out all the weak shoots, and those in an unsuitable position for tying in. Shorten the strong-growing shoots on young trees where more wall-space has to be covered. In tying the trees the operator should aim at furnishing the tree with young fruit-bearing shoots from the base to the summit, allowing a space between the shoots of at least 3 inches. Branches of old trees which extend throughout the tree with only fruit-bearing shoots at the ends should be shortened, and wherever possible removed altogether. Varieties of Cherries succeeding well on north walls are May Duke, Empress Eugénie, and Archduke. The fruits of these will be found valuable for culinary purposes, and they ripen earlier than the Morello. The north wall may also be used with advantage for prolonging the season of Plums, for which purpose the varieties Coe's Golden Drop, Victoria, The Czar, and Prince Englebert are suitable varieties. The variety Coe's Golden Drop will often in a dry autumn hang till the leaves fall and until the fruits are quite shrivelled. In districts where bullfinches and blue-tits abound Plum and Cherry trees should be protected with nets, using forked sticks to keep the nets from the trees. Much damage is done to the trees when shooting small birds; the shots often induce the formation of canker. Only in exceptionally cold weather are the buds of Morello Cherry-trees attacked by birds; these usually need no protection.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Herbaceous Calceolarias.—Plants raised from seeds sown last July will be making steady progress. If potting is necessary, a slight shift should be given. Good turfy loam and spent Mushroom-manure in equal parts, with a small proportion of lime-rubble and silver-sand, will be suitable for this purpose. It is advisable to either fumigate the plants or to dip them, before being potted, in a solution of "Quassia extract" in order to destroy and check green-fly. Water should be afforded very sparingly at first, but light and air should be admitted freely.

Mignonette.—A sowing may be made in small pots in a mixture of old Chrysanthemum soil and broken lime-rubble. The soil should be pressed firmly and watered before the seeds are sown. Sow thinly, cover the seeds lightly with soil and place the pots in a cool frame kept rather close. As the seedlings appear thin them out to about two or three plants in a pot. Place the plants as near to the light as possible, and when nicely rooted shift them into larger-sized pots. Allow a circulation of air to pass between the plants, in order to keep them robust.

Begonia Gloire de Lorraine. — Where large specimen plants are required some of the strongest of the stock plants that flowered early and have since been rested, may be plunged in leaves or fibre, in a warm house, and started into growth, in order to produce early cuttings. In a week or two's time sufficient cuttings for a first batch will be ready.

Allamandas and Bougainvilleas. — Specimen plants in pots that have been allowed sufficient period of rest, may be pruned to within two or three buds of the old wood, at the same time retaining sufficient of last season's growth necessary to make an evenly-balanced plant. If Bamboo canes are used for stakes, replace the old with new well-sharpened ones, which must be driven firmly into the ball of the plant. If these plants are placed in a warm, moist house, and are kept freely syringed, they will soon start into growth. When the roots have become active the plants should be turned out of their pots, the old balls reduced by means of a sharp pointed stick, and then repotted in a compost consisting of turfy loam and peat in equal parts, some broken charcoal and silver sand, and a small quantity only of plant-manure.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Bedding Roses.—The hybrid Teas are most effective for flower-garden bedding, as they are of moderate growth, and hardier than true Teas, and they flower almost perpetually. A very slight protection from frost, such as afforded by bracken or Fir branches, is necessary. For affording brilliant colour in late autumn I recommend Gruss an Teplitz. It is a vigorous grower, but keeps within bounds in a bed of average size. Other good crimson-flowered varieties are Marquise de Salisbury and Liberty. I do not know of a white counterpart to Gruss an Teplitz, but Souvenir du President Carnot is quite first-rate, bearing very large upright flowers in fine clusters. Madame Pernet Ducher, Augustine Guinoisseau and Viscountess Folkestone are good varieties. Camoens is a beautiful China rose, and Papa Gontier is excellent. The China Roses are of smaller growth, but very floriferous, being the truest perpetuals. Nothing can surpass these Roses for garden adornment. They are suitable for beds by themselves or as margins to other Roses. The common Blush China is hard to beat, and Madame Eugène Resal, Madame L. Messimy, Red and White Pet, and Cramoisie Supérieure, are splendid. Good drainage is essential for Roses, and they need light rich soil at least 2 feet deep.

The Wild Garden is the most fitting place for Roses that will not succeed when "cribbed, cabined and confined" in geometrical beds, or tortured on iron bars and chains. Choose a piece of ground of a diversified character, where every group can have a suitable position allotted to it. Imagine "fountains" of Polyantha grandiflora, villosa nivea, Crimson Rambler, and "waterfalls" of Wichuriana, hillsides planted with rugosa, Madame Georges Bruant, Conrad F. Meyer, Madame C. F. Worth in masses, with specimens of Aimée Vibert, Alister Stella Grey, and standard Wichurianas occupying prominent positions. Many of the robust growers have only transient floral beauty, but they afford splendid effects. R. Wichuriana and its hybrids flower in July and August; R. humilis and R. rugosa are nearly always in bloom; Pissardi has produced semi-double white flowers in autumn; lucida and rubrifolia have charming foliage, and, last but not least, Zéphyrine Drouhin, a lovely shade of rosy-cerise colour, is very charming in autumn.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Early Strawberries.—The end of January is generally sufficiently early to commence forcing, although those growers who require very early fruits commence in December. Strawberries started now should be allowed a temperature of 45°, with a slight increase during the day. As soon as the flower-trusses appear and the young leaves are pushing freely, liquid-manure may be unsparingly given. Remove all superfluous flowers from the trusses, and allow the plants the lightest situation in the house. Fertilise the flowers during the brightest part of the day, and allow plenty of warm, fresh air to circulate among them. As soon as the fruits are set they should be thinned to about six or nine berries, and the plants allowed a higher temperature. They must at this stage be freely syringed and liberally fed with manure-water until the fruits change colour, when they should be placed in a cooler and dryer atmosphere and the feeding should be discontinued. Fresh batches of plants may be introduced as required. Keep a strict watch for aphides, &c., and use remedial measures before they reach the flowering stage. Avoid fumigating the plants when they are in flower.

Peaches and Nectarines in Pots are especially adaptable for early forcing, especially such varieties as Alexandria and Hale's Early among Peaches, and Cardinal and Early Rivers among Nectarines. The trees should be healthy, the wood well ripened, and the house light and well ventilated. During the early stages of forcing the temperatures must not be allowed to exceed from 45° to 50° at night. During the time the trees are in flower a temperature of 50° should be maintained with a free circulation of air on all favourable occasions. Pollinate the flowers daily about noon with a small camel's-hair brush, and maintain a moderately moist atmosphere by damping the paths and borders of the house. If green-fly makes its appearance on the trees, mild fumigations must be employed before the flowers open. Syringe the trees in the morning if the weather is bright and favourable, and again in afternoon, except when they are in flower. Pay special attention to the watering of the trees.

Cherries.—To obtain ripe fruits early in May, much patience must be exercised during the early stages of forcing. At a later period, when the days lengthen and the sun-heat increases in power, the trees may be encouraged to develop more rapidly, and a little heat may be employed in the water-pipes, which should however be shut off at night-time, excepting in severe weather and when the temperature falls below 40°. Maintain a moderately moist atmosphere by syringing the trees morning and afternoon in good weather. Some artificial heat should always be used during the time the trees are in flower, with free ventilation both day and night when the weather is favourable.

Plum-trees, similar to Cherries, produce excellent crops when grown in pots, and they require the same low temperature during the early stages of forcing. Indeed their treatment should be almost identical until after the fruits are set and commence swelling, but they require a longer time to ripen their fruit.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

APPOINTMENTS FOR FEBRUARY.

THURSDAY,	FEB. 2	Linnean Society Meet.
SATURDAY,	FEB. 4	Société Française d'Horticulture de Londres Meet.
WEDNESDAY,	FEB. 7	British Gardeners' Association, Meeting at Croydon.
FRIDAY,	FEB. 10	Royal Gardeners' Orphan Fund' Annual Meeting and Election of Candidates.
MONDAY,	FEB. 13	United Horticultural Benevolent and Provident Society's Committee Meet. British Gardeners' Association, Meeting at Birmingham.
TUESDAY,	FEB. 14	Royal Horticultural Society's Committees Meet, also Annual Meeting of Fellows.
THURSDAY,	FEB. 16	Linnean Society Meet.
FRIDAY,	FEB. 24	Royal Botanic Society Meet.
MONDAY,	FEB. 27	Birmingham and Midland Counties Mutual Improvement Society Meet.
TUESDAY,	FEB. 28	Royal Horticultural Society's Committees Meet. National Rose Society's Committee Meet.

SALES FOR THE WEEK.

MONDAY AND FRIDAY NEXT—
Border Plants, Perennials, Roses, Azaleas, Fruit Trees, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.

WEDNESDAY NEXT—
Palms, Plants, Azaleas, Roses, Fruit Trees, Herbaceous Plants, Lilies, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.—Roses, Azaleas, Palms, Shrubs, Lilies, &c., at Stevens' Rooms, at 12.30.

FIRDAY NEXT—
Importation of Burmese Dendrobes, 450 Odontoglossum crispum &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —39·0°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, January* 25 (6 P.M.): Max. 47°; Min. 41°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Jan.* 26 (10 A.M.): Bar., 30·6: Temp., 38°. Weather—bright, with little sunshine.
PROVINCES.—*Wednesday, Jan.* 25 (6 P.M.): Max. 45°, W. of England; Min. 35°, E. of Scotland.

The National Potato Society.

SPECIAL societies are under a special obligation to justify their existence. If they fail to do so, their utility is not apparent, and they divert energy and funds which would be more profitably expended in supporting societies with broader aims and less selfish objects.

The Potato is such a very important factor in feeding the people that a special society to care for its improvement and the extension of its culture was called for. If anyone doubts this he has but to look at the Report of the first year's working to have his doubts removed. There is always a fear that these minor societies may become too exclusively commercial, and be influenced too much by persons mainly interested in the financial side of the question. Of course self-interest is a most potent factor, but it should not be made the be-all and end-all of societies established not for the benefit of individuals, but for the advancement of the cause and the general welfare of the community. The acquisition of knowledge is the first requirement, and then its application to practical purposes. Exhibitions got up for the mere purpose of awarding prizes to enterprising men of business are not likely to excite general sympathy. Men of business have their appropriate rewards in other ways. The case is altered when the acquisition of new facts and the wider diffusion of knowledge relating to them are concerned. From this point of view the independent trials carried out in various parts of the country by the Potato Society are valuable, and will be increasingly so as each year adds its quota to what is already known. A glance at the Report before alluded to will illustrate our meaning better than any elaborate disquisition on our part, and will, as we have said, show that the National Potato Society has already justified its existence, and bids fair to do great good by regularising and systematising our knowledge, whether of scientific or of commercial matters relating to the Potato. Some extracts from the Report are given in another column.

The Gardeners' Royal Benevolent Institution.

THE annual meeting of the "Gardeners' Benevolent," to give the Society its colloquial designation, always gives rise to mixed feelings. On the one hand, there is the feeling of satisfaction at the self-denying labours of a businesslike Committee and the consequent good work done. On the other hand, there is the disappointment that at least half the applicants for relief must be passed over for want of the requisite funds. True that approved candidates, if they have been subscribers or are the widows of subscribers, are eventually sure to be elected. But waiting under such circumstances is such wearisome work that every effort should be made to lessen its duration. Such efforts are indeed made, and it is hardly possible to exaggerate the benefits which accrue from the two subsidiary funds, the Victorian Era Fund, which furnishes some amount of relief to approved candidates during their period of expectancy; and the Samaritan Fund, instituted for the purpose of supplying timely aid to those more or less directly connected with the gardening industry without any other condition than that of need. The permanent income of the Society and the regular annual subscriptions should suffice to defray the cost of the pensions, and would do so if the annual subscriptions were increased in proportion to the necessities of the case; but the two subsidiary funds need constant replenishment to enable them to afford prompt relief to cases as they arise. The pension fund may be looked on as an insurance in case of need, and as a particularly good investment. This being so, self-interest should suffice to ensure a sufficient income for this department of the Society. The subsidiary funds may be regarded as purely benevolent agencies, and as such should command the sympathies of everyone. We are unfortunately obliged to use the conditional words "should" and "may," when it would be so much more satisfactory to be able to employ more direct phraseology.

Possibly the percentage of annual subscribers amongst gardeners might be increased by the more extended adoption of the instalment method of payment. It is not always convenient to pay the whole amount at one time, but if the payments were spread out over the whole year, no inconvenience would be felt. No doubt if such a plan were carried out the work at the head office would be largely increased, and the results might not justify the extra cost of collection. But this difficulty might be got over by extending the powers of the local secretaries and of the auxiliary branches. Already much is done by these local agencies, but we do not believe that the limits of the usefulness of those that are in existence have by any means been reached, whilst the number of such branches is only a fraction of what it might be. Some gardeners do their duty in this matter, and some employers act up to their responsibilities, but it is quite clear that while all do not, many more would do so were the claims of the Institution more directly brought under their notice. It is a pitiful thing to see gardeners ignoring their duty of supporting the Institution according to their ability, and it is a lamentable thing to see employers who have the means suffering their old servants to become pensioners without contributing to the Institution which helps to lessen their responsibilities.

It is to the local secretaries and auxiliary branches that we look for aid in this matter. Circulars sent through the post and appeals made in the Press are feeble in comparison with personal intervention. We are all so plagued with circulars that a very large proportion of them find their way straight to the waste-paper basket with no more than a glance. The word in season spoken by man to man is much more effectual. A suggestion from the gardener to his employer that for one day in the year he should throw his grounds open at a small charge for the benefit of the Institution has proved effectual already, and would be much more so if more generally acted on.

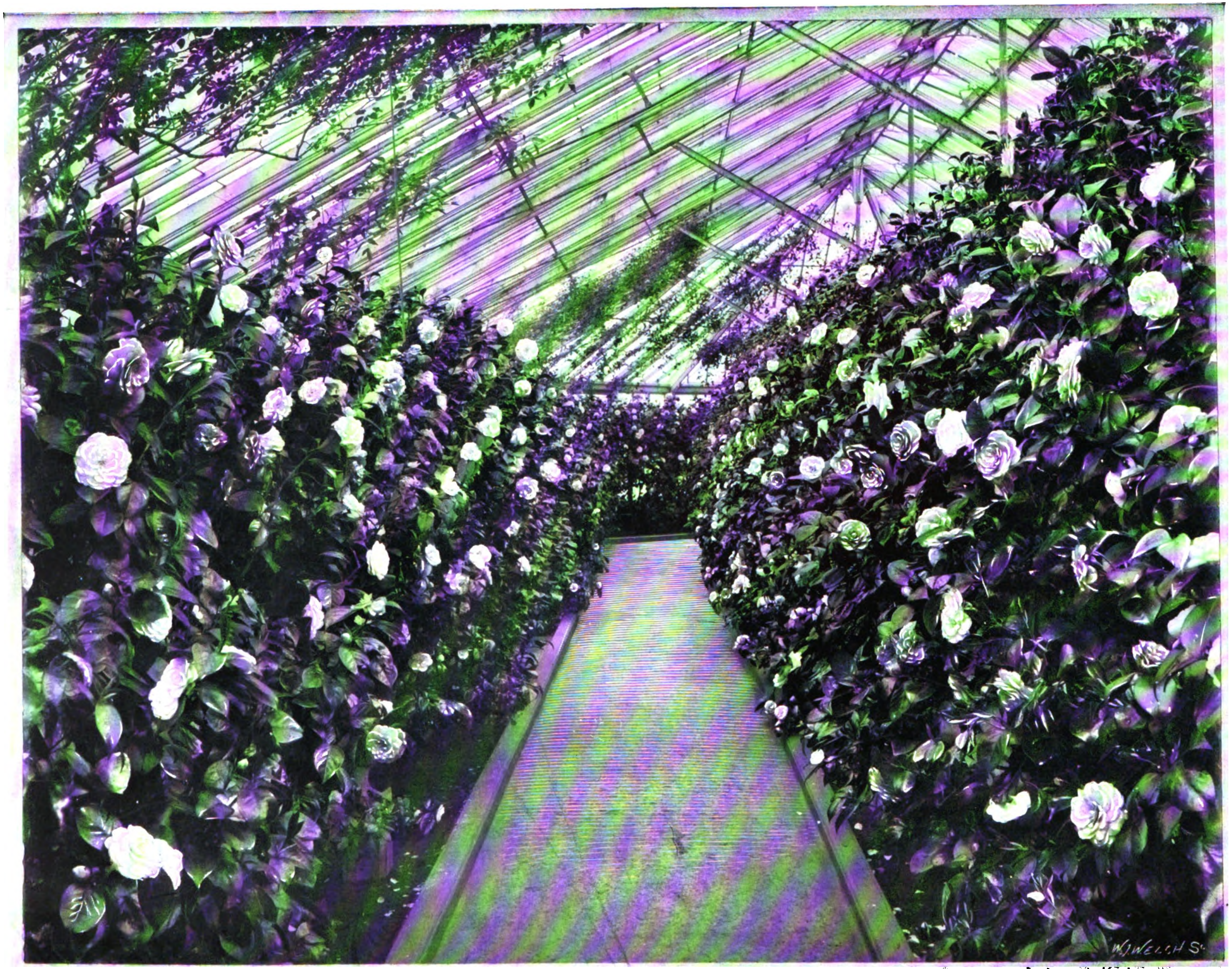
A small poll-tax from all casual visitors to flower-shows throughout the whole country would bring in a large amount in the aggregate, and if the amount were paid for with the ticket of admission, the extra outlay would not be felt.

Gardeners' Debating Societies are rapidly increasing, and these might individually do a good deal, whilst if they were properly organised so as to be able to act collectively they would be able to accomplish much more. From this point of view we have great hopes from the newly-founded British Gardeners' Association, instituted for the benefit of employers and employed. Isolated units can accomplish little; associations for reciprocal effort can do much.

The Annual General Meeting of the Gardeners' Benevolent was held at the Covent Garden Hotel on Friday, January 20, at 8 P.M.

Mr. HARRY J. VEITCH, in proposing the adoption of the Report and Balance-sheet, which we reproduce on p. 62, said that it was of greater length than any previously presented by the Committee; but the work of the Institution is greater year by year, and its responsibilities have increased. Not only did the Committee commence last year with a larger number of

Supplement to the "Gardeners' Chronicle."



CAMELLIA HOUSE, IN THE GARDEN OF MRS. TEMPLE, AT LEYSWOOD, GROOMBRIDGE, KENT.

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge

pensioners on the books than ever before, but they were going to elect that day six more pensioners than they did then. They knew from the correspondence that the Institution was more popular in the provinces now than it had ever been, and the Committee believed this to be due in a large measure to the successful efforts of the "auxiliaries." The Reading Auxiliary had collected during the past year a sum of about £129, and at Worcester and other centres good work had been done. After an appreciative reference to the amount of work discharged by the Secretary, Mr. G. J. Ingram, Mr. Veitch said the Committee proposed that instead of electing eighteen pensioners, as suggested in the Report, they should that day elect twenty. He made reference to the usefulness of the Victorian Era and Samaritan Funds.

Mr. Alderson seconded the adoption of the Report, and it was carried unanimously.

On the proposition of Mr. Arthur W. Sutton, seconded by Mr. Geo. Monro, Mr. Harry J. Veitch was re-elected Treasurer. Whilst seconding the resolution, Mr. Sutton announced his intention to provide a year's pension for one of the unsuccessful candidates on that occasion, for which he would present to the Committee the sum of £20.

Mr. G. J. Ingram was then re-elected Secretary on the proposition of Dr. M. T. Masters, F.R.S., seconded by Mr. Segar.

The retiring members of the Committee were re-elected, and Mr. George Woodward was elected a member of that body in place of Mr. Osborn, deceased; and Mr. Edward Sherwood in place of his father, Mr. N. N. Sherwood, who retired.

The Auditors and Arbitrators were re-elected, Mr. Geo. Monro reminding the meeting that although the Institution was obliged by statute to appoint Arbitrators, they had fortunately never been in such a position that the Arbitrators had been called upon to act.

Several gentlemen were then appointed scrutineers of the ballot, and the meeting was adjourned until 5.45 P.M., when the successful candidates were announced as follows:—

	Votes.
WILLIAMS, EDWIN	4 566
BENBOW, ELLEN	3,976
PAGET, LOUISA S.	3,624
JOHNSTON, JOHN	3,562
THORNTON, HENRY J.	3,528
SMITH, ANNA M.	3,509
ALLWARD, ELIZA	3,285
BROWN, DUNCAN	3,056
PAGE, ANNE	3,047
DIXON, PETER	2,894
HEYWOOD, GEORGE	2,881
HARRIS, CHARLES	2,860
CANN, GEORGE	2,856
HUDDY, JOHN	2,765
ODLIN, WILLIAM	2,734
PELLETT, WILLIAM	2,586
GARLAND, SAMUEL	2,544
WYNNE, THOMAS	2,449
LEE, FREDERICK E.	2,396
HAWKINS, BENJAMIN	2,279

Additional pensioners were afterwards elected as follows:—

	Votes.
PLUMMER, MARY A.	2,165
PORT, JAMES	1,622
BROOKS, SAMUEL	2,104
BRADBERRY, JOHN	851

The first-mentioned candidate was elected by the munificence of Mr. N. N. Sherwood, the second by that of Mr. Arthur Sutton, and the two remaining candidates were placed on the Fund by the Committee in exercise of their right under one of the bye-laws. The Committee selected a subscriber and a non-subscriber. The votes given above are the numbers the candidates obtained in the general poll, when they failed to get in the first twenty.

The scrutineers reported that there were twenty-four spoiled votes, and in one instance a subscriber who should have given 5 votes endeavoured by inadvertence to give 85!

The Annual Friendly Supper took place at the same Hotel (Covent Garden) at 6 P.M., Mr. Edward Sherwood presiding. The Chairman referred to the valuable services of Mr. Harry J. Veitch to this Institution, and the fact that owing to the general respect in which Mr. Veitch is held by all horticulturists, the last annual festival was so great a success that £1000 had been added therefrom to the Victorian Era Fund.

Mr. Sherwood pleaded for more auxiliaries, and suggested that concerts and bazaars might be arranged in order to benefit the Fund. A musical society with which Mr. Sherwood is connected has raised a sum of £50 by means of a concert. Mr. Sherwood read an interesting letter from his father, stating that he presided at one of the Friendly Suppers held thirty-six years ago, and expressing unabated interest in the objects of the Institution. Mr. Arthur A. Sutton responded, and expressed regret that Mr. H. J. Veitch was not able to remain with the company and respond to the toast as in former years. Mr. Sutton gave many interesting items relating to the work and responsibilities of the Institution, and incidentally remarked that of the pensioners on the Fund there are two over ninety years of age, forty-six over eighty years of age, and seventy-three over seventy years of age.

Mr. H. J. Hicks proposed "The Committee, Honorary Officers, and Country Friends," which was responded to by Mr. Geo. Monro and Mr. W. Atkinson, Sheffield.

BATH BRANCH.

The twelfth annual general meeting of the Bath branch was held at West's Dining Rooms on Thursday evening, January 19. The chair was taken by R. B. Cater, Esq. Mr. J. Milburn (Hon. Secretary) read the Report for the year. The financial statement was very satisfactory, last year's total being £33 18*s*. 5½*d*., and for this year, £44 17*s*. 1¾*d*. The sale of flowers and collection at the Bath Rose show realised £13 10*s*., against £15 1*s*. 1½*d*. last year. The Bristol and Bath Auxiliary has this year transmitted to the parent Society the sum of £78 15*s*. Five life members have been elected to the Institution—two from Bristol and three from Bath.

The Institution was founded in 1839, and at the present time there are on the permanent funds for their lives 204 persons, 116 men and 88 widows, who are receiving £20 and £16 a year. There are eleven pensioners in this neighbourhood—three in Bath and six in Bristol and Clifton. They receive from the parent Society £204 a year in pensions.

R. B. Cater, Esq., was unanimously elected President in place of the Rev. E. Handley. The Committee of Management was re-elected, as was the Secretary.

Gardeners' Royal Benevolent Institution.—Mrs. Mary Plummer and Mr. John Johnston tender their heartfelt thanks to all subscribers who so kindly assisted in placing them on the list of pensioners.

Camellia House at Leyswood. — The Supplementary Illustration to our present issue affords a view in the Camellia-house at Leyswood, Groombridge, Kent, the residence of Mrs. Temple. Though Camellias have ceased to be cultivated as large specimen bushes to the extent they were formerly, when hard-wooded greenhouse plants were exceedingly popular, there are, happily, some gardens in which a collection has been retained, notwithstanding the caprice of fashion. Leyswood is such a garden, and our readers will easily see that the plants have not only been "spared," but they are cultivated with conspicuous success. The plants are full of luxuriant growth, healthy foliage. and bear abundant flowers, which, after all, are of considerable service when they have been cut with part of the shoot attached or pulled and wired. Mr. Ernest Bristow, the gardener, informs us that the house is 80 feet long, 32 feet wide, and 17 feet high. "The plants are grown in a compost of loam, peat, leaf-mould, and sand, in which they grow vigorously, making young growths often exceeding a foot in length. Many of the plants are from 10 to 12 feet high. They are pruned fairly hard immediately after flowering. No artificial heat is used except to keep out frost, and abundance of air is admitted whenever possible. About sixty varieties are planted in the house. A few of the best are Albino Botti, Isabella, Regina Margherita, Caterina Loing, Superbe, alba plena, Bertha Ravene, Bonomiana, Marie Teresa, Isabella Galletti, imbricata tricolor, Michel Angelo, incarnata, Angela Cocchii, Etrusca, imbricata, centifolia carnea, Solfatara, Donckelaarii. On the roof of the house Roses, Clematis, Lapagerias, &c., succeed, and are effective in their season."

Royal Horticultural Society's Examinations (School Teachers).—The Royal Horticultural Society will hold an examination in Cottage and Allotment Gardening on Wednesday, April 5, 1905. This examination is intended for and will be confined to elementary and technical school teachers. It has been undertaken in view of the increasing demand, especially in country districts, that school teachers shall be competent to teach the elements of cottage and allotment gardening, and in consequence of the absence of any test whatever of such capacity. The general conduct of the examination will be on the same now well-known lines as that of the more general examination, save in obvious points to which they would not apply. Intending candidates are requested to send in their names early in March. A Silver-gilt Flora Medal will be awarded to the candidate gaining the highest number of marks, and each candidate will receive a Certificate of the Class in which he has passed.

—— General Examination. — The Society's Annual Examination in the Principles and Practice of Horticulture will be held on Wednesday, April 12, 1905. The Society is willing to hold an examination wherever a magistrate, clergyman, schoolmaster, or other responsible person accustomed to examinations will consent to supervise one on the Society's behalf, and in accordance with the rules laid down for its conduct. A copy of the Syllabus covering both examinations will be sent to any person on receipt of a stamped and directed envelope. Questions set at the Royal Horticultural Society's Examinations 1893-1904 may also be obtained at the Society's Offices, Vincent Square, Westminster, price 1*s*. 6*d*.

Linnean Society.—An evening meeting will be held on Thursday, February 2, 1905, at 8 P.M., when the following papers will be read:—"New Chinese Plants from the Neighbourhood of Hong Kong," with lantern slides, by W. J. Tutcher, F.L.S.; and "European Marine Species of Cirolaninæ (Isopoda)," by Dr. H. J. Hansen, F.M.L.S.

Apple Fenn's Wonder.—Mr. Thos. Simpson, Henham Gardens, Wangford, writes to say that this Apple, which was illustrated in our pages on January 14, is in future to be called Lord Stradbroke. The variety is a chance seedling which appeared in Henham Gardens some years ago.

Floras of India.—In addition to the works on this subject which we mentioned on p. 41, reference should also be made to the late Col. Sir Henry Collett's *Flora Simlensis*, a small book especially useful to amateurs on account of the excellent illustrations.

THE MASSACHUSETTS HORTICULTURAL SOCIETY.—In the *Transactions* for 1904 mention is made of the famous library of the Society, probably the best of its kind in the world. An account is also given of the Arnold Arboretum, to which we have frequently referred. The city of Boston maintains the roads and paths, whilst the management and scientific direction are under the supervision of Harvard University. Professor Sargent, the author of the *Silva of North America*, and other works, is the Director, and his library of about 10,000 volumes has been made over by him to the Arboretum. Nature-study and the protection of native plants are treated of in this number, as well as the culture of the Gladiolus and of the Pæony. The part is well illustrated.

M. VIGER.—The President of the National Horticultural Society of France has been named as Chevalier of the Legion of Honour, the distinction having been conferred by the President of the Republic in person.

THE FROST ON THE RIVIERA.—The *Revue Horticole* gives a deplorable account of the destruction caused by the recent severe weather not only on the north side of the Mediterranean, but also in Tunis and Algeria. The crop of Roses is mostly destroyed, also Violets, Anemones, Reseda, Ranunculus, and other flowers, have been almost entirely ruined, and in the market gardens there are no more Artichokes, Lettuces, Radish, Carrots, Turnips, or Cauliflowers. What the effect will be on the Palms it is too soon to judge. It is a curious fact that our own growers have lately been supplying the Paris markets with forced Tulips and other flowers.

SIR HENRY GILBERT'S LIBRARY. — The library of the late Sir Henry Gilbert, which is extensive and very rich in works relating to chemistry and the theory and practice of agriculture, is offered for disposal. But for the fact that the Rothamsted Trust has already the library of the late Sir John Lawes, we should have supposed that Sir Henry Gilbert's collection would naturally have been retained at Rothamsted, and not be separated from the scene of his lifelong labours. As it is, the library would be a most valuable acquisition to some of the now numerous agricultural colleges, and we trust it may soon find a home in one of these institutions.

"MY GARDEN DIARY."—Messrs. Sutton & Sons, of Reading, have prepared a useful book of notes for the present year, entitled *My Garden Diary for* 1905. The pamphlet includes useful gardening hints for every month in the year, besides special directions for managing bulbs, seeds, &c. Blank pages are left on which suitable records can be made, and with various illustrations and a pretty coloured cover the whole publication is very attractive. Needless to say, the directions therein given may be implicitly followed.

RAMSEY HORTICULTURAL SOCIETY. — Lord de Ramsey has been re-elected President of the Society, and the annual show is to be held on the August Bank Holiday.

THE SCILLY ISLES.—The winter at Scilly has been the best on record. The thermometer at Tresco Abbey has only on one night fallen below 40° Fah. There has been little wind. The flowering of the Pelargonium is the best ever experienced in winter in the island.

THE HAMPTON COURT VINE.—Visitors to Hampton Court Palace just now, if wishing to see the famous old Vine, will find themselves debarred that pleasure for a brief period, as the vinery itself is undergoing a complete change. The old house which had for so many years sheltered the Vine is entirely removed, and its place taken by a new one of the same area, but of a semi-span form, giving a much steeper roof—a great need for a vinery. The rods of the Vine, all now bundled and covered up to keep the buds from harm, will in the future be tied to wires fixed to light iron spandrils, and will be 2½ feet from the glass. That will seem to many persons to be of considerable distance; but it may be taken for granted, as the arrangement is being carried out under Mr. A. Mackellar's instructions, that so eminent a gardener knows well what he is advising. A great gain to both Vine and its Grapes will be found in the exclusion of visitors from the inner area of the vinery, as under the old arrangement and with a flagged floor the dust raised coated both foliage and Grapes with dirt. A small room has been cut out from the residence of Mr. Jacks, the veteran custodian of the Vine, which adjoins the vinery, and that will presently form a glassfronted lobby having an entrance and an exit. Visitors will be permitted into this lobby only. It will not well contain more than a dozen persons at a time; and on certain days the regulation of the thousands who flock to see the Vine will doubtless be a matter of some difficulty. A glass corridor running along the back of the vinery would have been better. Hot-water-pipes will replace the old brick flues, and as the whole of the flagging is removed, the floor will be converted into a border, into which it is hoped new surface roots may be freely formed, and in time new rods also.

SWERTIA TASHIROI is the name of a species figured and described (in English) in the *Journal de la Société d'Horticulture du Japon*, November 30, 1904. Its large white pendulous flowers make their appearance in November. The plant is a native of the south of Kioushiou and of the Island of Yayéyama. M. Makino recommends this plant for cultivation.

PRICES OF KEW "HAND-LISTS."—A correspondent writes contrasting the cheapness with which the excellent leaflets of the Board of Agriculture are distributed in comparison with the Kew *Hand-Lists*. We submitted the letter of our correspondent to headquarters at Kew, and learn that—

> "1. The Director is most anxious that the Kew publications, in the sale of which he has no pecuniary interest, should have as wide a circulation as possible.
>
> 2. The principle upon which the present prices are fixed is not intelligible to him, and is to a large extent undoubtedly prohibitive.
>
> 3. The Director has, however, no control over the prices, which are fixed by the Controller of H.M. Stationery Office.
>
> 4. If the Stationery Office cannot meet the legitimate demands of the horticultural world, why not give private enterprise a chance?"

MR. CHAMBERLAIN AND THE BRITISH GARDENERS' ASSOCIATION.—Mr. W. Watson, the Secretary of the British Gardeners' Association, having forwarded copies of the "Plea" prospectus, &c., to the Right Hon. Joseph Chamberlain, M.P., has received the following letter:—

> "Highbury, Moor Green, Birmingham,
> *January* 23.
>
> I am desired by Mr. Chamberlain to acknowledge the receipt of your letter of January 20, and to say that he cordially approves of the proposal to establish the British Gardeners' Association and cordially wishes it success.
>
> J. Wilson."
>
> *To* W. Watson.

THE BRITISH GARDENERS' ASSOCIATION.—"The Aims and Objects of the British Gardeners' Association" was the subject under discussion at a meeting held under the auspices of the Loughborough and District Gardeners' Association, at the Town Hall, Loughborough, on the 17th inst., Mr. J. T. Smith presiding over a large and representative attendance of local gardeners. In the course of his address Mr. W. H. Divers, head gardener at Belvoir Castle and a member of the Committee of Selection of the "B. G. A.," after giving a most interesting account of the early history of gardening and the great advancement that has been made in all branches of gardening within recent times, said that most unfortunately there had not been a corresponding advance in the wages paid to gardeners. He then proceeded to explain the objects and programme of the Association, pleading that hearty support should be given to it by both employer and employed. After some discussion, upon the motion of Mr. D. Roberts, of Prestwold Gardens, Loughborough, it was unanimously resolved that "All those present pledge themselves to give their support and co-operation to the British Gardeners' Association." Mr. W. Begbie having been elected Local Secretary, the usual hearty votes of thanks were accorded to the lecturer and Chairman.

—— A representative meeting of the gardeners and nurserymen of Cardiff and Newport districts was held at the town hall on January 16, to consider the advisability of organisiug a local branch of the British Gardeners' Association. Mr. Stephen Treseder, F.R.H.S., presided. Mr. R. Hooper Pearson (London) and Mr. W. W. Pettigrew (Superintendant of Parks, Cardiff), were the principal speakers. Mr. Pettigrew, in opening the proceedings, urged the need for co-operation among gardeners. Mr. R. Hooper Pearson explained that the aims of the Association were to better the conditions of labour and the wages of gardeners, and at the same time to raise the standard of the gardener and gardening, so that the employer will be benefited as much as the *employé*. Mr. Hugh A. Pettigrew proposed that a branch of the British Gardeners' Association should be formed to embrace the Cardiff and Newport districts. A number of gardeners in the district had already, he said, joined the Association. By forming a branch however the members would have more weight and influence in helping forward the aims of the Association. Mr. Fred Treseder (nurseryman) seconded the resolution, which was carried unanimously. Mr. Hugh A. Pettigrew was elected local Hon. Sec.

THE FIRE DANGER IN COUNTRY HOUSES.—The *Estate Magazine* calls attention to the fact that in 1904 there were no fewer than thirteen destructive fires in country mansions, involving in many cases the loss of historical documents, pictures, libraries, and other property that money cannot replace. The causes were mainly due to defective flues and imperfect electric-light installations.

THE HUGE CHRISTMAS-TREE which was the delight of so many children visiting the Crystal Palace during the Christmas holidays was, as usual, supplied by Mr. Jeremiah Colman, of Gatton Park.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE APPLE CENSUS.—If it has done nothing else, the Apple census has helped to accentuate the fact that it is too much to expect that the growers of, or those commercially interested in, our fruit should also be critical judges as to their excellence in flavour, otherwise we should not see so second-rate an Apple as the King of the Pippins in the high position in which it is placed. Half a century ago it was considered to be bright and useful, for King Pippin cider was well known and duly appreciated in Kent. When planting an orchard, I wrote to Mr. Scott, of Merriott, Somersetshire, for some trees, whereupon he strongly advised me to put in some Golden Winter Pearmain, which he said was a larger, better grower, and of upright character, and far uperior in flavour to the King Pippin. I did so, and was well pleased with the change. Again, though handsome, is the Worcester Pearmain first-rate? I consider Blenheim Pippin the best all-round fruit that I ever grew, both for beauty of colour, form, size, and flavour; and some years ago I was awarded a Cultural Certificate at the Royal Horticultural Society for its quality of growth. I never found Cox's Orange Pippin so good [as Blenheim Pippin], nor equal to the Ribston Pippin, though it was better in colour. Irish Peach being placed where it is is another and a greater surprise. Warner's King is with me a grand Apple and a wonderful bearer. One tree that I have has been loaded for three successive seasons with large and fine fruit. My trees of the King of Tompkins County, though the variety is not a great bearer, have proved highly satisfactory, the Apples being large and fine. Bramley's Seedling deservedly has many admirers. Why Dumelow's Seedling comes in where it does I am at a loss to know; but to my thinking the selection of Lord Suffield| is the greatest mistake of all. With the exception of its earliness, I think in comparison with some others it has nothing to recommend it. I quite agree with Mr. George Bunyard in this respect. He says he has seen it "much grown about Worthing." So have I, and the trees were most prolific; but no one would buy the fruit, and when the ground was strewn with Apples, though they were offered to be given to anyone who would fetch them away, no one would do so, and this not without reason, for I have a dish heaped with peeled, cut, and cored Lord Suffield, and after the cooking (?) the bottom was scarcely covered with the semi-acid pulp. For my own part, I generally divide Apples into three varieties—that is, coloured, yellow or green, and russets, the last having amongst them some of the very finest-flavoured Apples that I have ever tasted, being totally different from others, and yet these are never mentioned, nor; indeed, are others of the very highest quality. Truly taste is a gift, and not acquired, nor is a critic on this likely in any way to be biassed. I will return to this subject again. *Harrison Weir, F.R.H.S., Poplar Hall, Appledore, Kent.*

STATICE FRUTICANS.—In reference to the note on Statices which appeared on p. 419 of your issue for December 17 last, what I meant to say is that I had a solitary plant of the species Statice fruticans in my garden, growing in the vicinity of other Canary Statices (S. macrophylla, S. brassicæfolia, S. macroptera, S. imbricata), and that for two or three years I did not succeed in reproducing S. fruticans, the seed invariably giving rise to hybrids with the other neighbouring Statices. The seed was plentiful. If grown quite isolated from other species, and only a single plant, S. fruticans will hardly produce seed at all. The same is the case with other Canary Statices. I simply state the fact observed by me, and do not venture to give any explanation. *P.*

RAINFALL IN CO. KILKENNY.—Our record of rainfall for the past year was 37·62 inches, and though considerably under last year's total of 50·66 inches we are only just under the average, which for the past eight years is 39·50 inches. *J. G. W., Bessborough.*

RIPENING WOOD-GROWTH ON NORTH WALLS.—In reference to "A. D.'s" remarks at p. 13 regarding the ripening of the Victoria Plum on a north wall in Hampshire, I may say that not only the Victoria but also trees of Prince Englebert, Mitchelsons, Old Orleans, and Coe's Golden Drop ripened good crops of fruit on a wall having a due north aspect in Longford Castle Gardens every year during the years I had charge of the gardens there. The fruit of Coe's Golden Drop gathered from the trees growing against the north wall extended the supply of that delicious Plum, previously obtained from trees growing against walls having west and east aspects. Some seasons, it is true, the fruit on the north-wall trees had to be artificially ripened by placing them one deep in cotton-wool-lined trays, covering them with tissue-paper, and then putting them on a shelf in a Melon-house or vinery in which a somewhat dry, airy, and warm atmosphere was maintained for the ripening off of the fruits in those houses. These conditions tended to put plenty of flavour into the Golden Drop Plums, which were highly appreciated in the dining-room so late in the season, and elicited favourable comments from host and guests. Indeed, I am justified in going farther by saying that the trees on the north wall bore good crops when trees occupying east and west walls were but scantily cropped, inasmuch as the trees on the north wall were much later in coming into flower, and so escaped injury from frost. I may say that the brick walls in Longford Castle Gardens are 14 inches wide and from 9 to 12 feet high, and in the aggregate afford a total length of 1,700 yards *H. W. Ward.*

CRYPTOMERIA JAPONICA.—The list of largest specimens in the United Kingdom given at the end of the "Report of the Conifer Conference" mentions a specimen of this tree growing at Coollattin, Wicklow, 67 feet high, with a girth of 5 feet at 5 feet up, as the finest tree out of twenty-eight returns sent to the late Malcolm Dunn. As the Conifer Conference was held so long ago as October, 1891, this tree, if still growing and undamaged, should be much finer than that mentioned by Mr. Page, of Dropmore Gardens (see p. 44). The finest Cryptomeria japonica in the Pencarrow collection is one planted by Sir Wm. Molesworth in 1849, and is now 62 feet 6 inches high, with a girth of 8 feet at 5 feet from the ground. This tree is well clothed and of perfect shape, tapering to a point. I well remember the beautiful Abies (Tsuga) Brunoniana mentioned by Mr. Page. It was, I think, about the time of the Conifer Conference that, while I was foreman at Dropmore, the late Prof. Carl Hansen came to that place. Mr. Herrin was engaged with Lady Louisa Fortescue, and his loss was my gain, for I had the good fortune of piloting the famous Danish arboriculturist around the pinetum. I shall never forget the Professor's expressions of admiration when we came to this Tsuga. After assuring himself of its identity—for although politeness itself, Mr. Hansen would take neither my nomenclature nor that of the labels, but wisely examined each tree we came to—he was at first literally dumb with admiration; then, after a few remarks in Danish, he turned to me with "Ah, my young friend, I am overjoyed! You, who live with these wonderful trees growing like this in the open-air, cannot realise what they are to me, who hitherto have only seen this tree growing in a pot wintered in the conservatory. I really must take home some of these beautiful strobiles." So we gathered up the fallen cones by the dozen. *A. C. Bartlett, Pencarrow Gardens.*

—— Mr. Page's remarks on this tree (see p. 44) are of great interest, and I should be much obliged if he could give particulars of the amount of growth that was made during the first thirty years of the tree's life, as compared with that of the last thirty years, as shown by breadth and leading shoot. Also could he give the cubic contents of the tree as ascertained by quarter girth measurement? As the Japanese "fever" is now very prevalent, facts of this kind are of value, and may possibly indicate what we may expect to take place in the case of other species. *A. C. Forbes.*

CEDRUS DEODARA VAR. ALBA SPICA. — I quite concur with all Mr. Page wrote on p. 44 respecting this excellent variety. We have two trees in the pleasure-grounds that have been planted eleven years. At the present time they are only 13 feet high, but 56 feet in circumference. The peculiarity of this variety here is that it grows in the form of a bush. Mr. Page does not state if the tree at Dropmore grows in bush form. Our trees are admired by everyone who has seen them. *Thos. Harris, Lower Grayswood Gardens, Haslemere.*

THE LAST OF THE FAMOUS ARAUCARIA AT DROPMORE.—For the past three years this fine old tree has stood in the grounds here a withered mass of leaves and branches. Gardeners and other visitors have from time to time called in to see it, or asked the question—"Is the Araucaria still standing?" Last week it was taken down. I found nearly all the main roots near the surface were quite decayed, but, strange to say, those at the base were pliant, and seemed to have some life in them. This appears to indicate that the decay commenced at the surface roots first and gradually spread downwards. *C. Page, Dropmore Gardens, Bucks.*

THE TRAINING OF YOUNG GARDENERS.—As "W. C. R." appears to wander further from the above subject with each letter, I do not think any good purpose will be attained by prolonging this discussion, but should like to add that I had no idea of advancing new theories when advocating the use of suitable perennials instead of the usual class of tender summer bedding plants, but rather that of economising time and labour in cases of necessity. "W. C. R." doubts if many employers would like it; but I would remind "W. C. R." that employers are not cast in a mould, neither are gardeners. *J. G. W., Bessborough.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

January 24.—A meeting of the Committees took place on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. Notwithstanding the cold weather then obtaining, there were many more exhibits staged than on the previous occasion, Orchids constituting the predominating feature.

The Orchid Committee recommended Awards including two First-class Certificates and seven Awards of Merit. On this occasion Mr. Harry J. Veitch retired from the Chairmanship of this Committee, and he is succeeded by Mr. J. Gurney Fowler, the Society's Treasurer; Mr. Veitch will remain as a Vice-Chairman. The Committee awarded a Gold Medal to a collection of Orchids shown by G. F. Moore, Esq.

The Floral Committee recommended Awards of Merit to Cotoneaster pannosa and Erica mediterranea hybrida. There were groups of Cyclamen, Primulas, Carnations, forced shrubs, Ferns, alpine plants, &c. The Floral Committee met on this occasion in a room on the first floor, which, it is presumed, will be the future home of this Committee.

The Fruit and Vegetable Committee recommended no awards to novelties, and had few fruits to inspect, but there was a large collection of Potatos from Mr. H. J. Jones.

In the afternoon seventy-one new Fellows were elected, and a paper on the German methods of fruit preserving was read by the Assistant Secretary.

Floral Committee.

Present: W. Marshall, Esq., Chairman; and Messrs. H. B. May, Jas. Hudson, Jno. Green, G. Reuthe, Chas. Blick, John Jennings, W. Howe, J. F. McLeod, C. R. Fielder, R. Wilson Ker, Geo. Nicholson, H. J. Jones, R. W. Wallace, H. J. Cutbush, C. E. Shea, C. E. Pearson, W. Cuthbertson, Chas. Jeffries, E. H. Jenkins, C. J. Salter, W. P. Thomson, M. J. James, C. T. Druery, R. Hooper Pearson, and J. A. Nix.

Messrs. H. Cannell & Sons, Swanley, Kent, filled the entire side of one of the centre tables with pot-plants of their strain of Primula sinensis. The group was attractive and bright, the colours and form of the flowers well developed, and the plants well cultivated. They were exhibited in batches in their respective colours, such as Cannell's Blush, Cannell's White, Cannell's Red, &c. One batch exhibited as Swanley Giant Improved was of a very fine type, the flowers being large and of an excellent colour of rose shading to crimson. Messrs. Cannell also set up a pleasing batch of that useful winter-flowering plant, Coleus thyrsoideus (Silver Flora Medal).

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, set up a number of flowering plants of Coleus thyrsoideus, Eupatorium vernale and Cheiranthus kewensis. The whole were interspersed and relieved with suitable foliage plants. Messrs. Veitch also presented specimens of Hamamelis arborea and H. mollis, the latter having brighter and broader petals than the former, although the crenated appearance of the flowers is absent in the newer species. Plants of Cotoneaster pannosa were well furnished with its pleasing red berries or pomes (see Awards).

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, set up a collection of Ferns, many of the choicer and newer species were represented. A number of Selaginellas were included—S. grandis, S. mertensia variegata, S. stolonifera and the dwarf-growing S. apus [apoda]. The same firm displayed a number of plants of Eranthemum pulchellum in flower (Silver Banksian Medal).

A group of Cyclamen staged by Mr. W. Seward, Nurseryman, Hanwell, was an object-lesson in good culture. The strain is evidently a very fine one, and the colours have been selected with rare judgment. The individual plants were well grown and profusely flowered, the flowers being large and of excellent substance, colour, &c. (Silver-gilt Banksian Medal).

Messrs. Ambrose & Son, Cheshunt, Herts, filled a large space with greenhouse plants, cut flowers, stands of Grapes, &c. Eucharis grandiflora was shown well, as were also Carnations, Lily of the Valley, Roses, &c. (Silver Banksian Medal).

From the gardens of Sir W. Plowden, at Aston Rowant House, Oxfordshire (gr., Mr. W. H. Clarke), came a collection of sprays of coniferous trees, including Thujopsis borealis lutea, Pinus excelsa, Picea Pinsapo glauca, Juniperus sabina albo-spica, J. drupacea, J. hibernica, Cupressus funebris, and many forms of C. Lawsoniana, Picea Engelmanii, Thuja Lobbii, &c.

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, staged hardy ornamental foliage and berried plants, Ivies, Euonymus radicans, E. latifolia alba, Aucuba vera (excellently berried), &c. A basket of Hamamelis arborea was noticed.

Mr. W. Hayward, florist, Fife Road, Kingston-on-Thames, set up examples of the florists' art—baskets, bouquets, and vases of flowers, &c. The Chrysanthemum Winter Cheer was utilised to good effect in a large artistic basket, proving its value as a late variety. Bouquets of Lily of the Valley and of Narcissus made a pleasing display (Silver Banksian Medal).

Mr. H. J. Jones, Lewisham, brought two vases of Chrysanthemum Market Gold, proving the value of this variety for producing flowers late in the season.

Messrs. Wm. Cutbush & Son, Highgate, London, N., arranged several boxes of alpine plants in a natural manner, filled with some of the earlier-flowering species, utilising pieces of rockwork towards the background, among which was arranged dwarf Conifers, Pernettyas, Skimmia japonica, &c. Among the alpine plants in flower we noticed Adonis davurica, Iris Danfordii, Cyclamen Coum, Sternbergia Fischeriana &c. Irises were a feature in this collection (Silver Banksian Medal).

Messrs. Cutbush & Sons, Highgate, also staged a group of Magnolias useful for conservatory and general decoration as well as for planting in the open. The members exhibited were carrying numerous flowers, and the species and varieties represented were M. amabilis, M. conspicua (pure white), M. Soulangeana, M. Halleana (double-flowered, white). &c. M. Soulangeana was by far the handsomest variety shown, the large flowers with claret-colour on the exterior of the petals being pure white in the interior. Palms interspersed among the group and an edging of Aralia Sieboldi gave a suitable finish to this handsome exhibit (Silver-gilt Banksian Medal).

Messrs. T. S. Ware, Ltd., Feltham, Middlesex, staged numerous pans of Alpine plants, few of which were in flower. Saxifrages were represented in numerous species in both the sections, and most of the other species of plants suitable for rockeries and alpine gardens found a place in the collection. Such a collection would make a fine display later in the season when they are in flower. Lithospermum rosmarinifolium and Adonis amurensis were shown in flower (Bronze Flora Medal).

A few hardy bulbous plants were exhibited by Messrs. Barr & Sons, 11, 12, and 13, King Street, Covent Garden, including excellent pans of Galanthus Elwesii, the flowers of which were larger and of superior form to the ordinary G. nivalis.

The Misses Hopkins, Mere, Knutford, Cheshire, had a small exhibit of coloured Primroses, Polyanthus, &c., and a large basket containing well-flowered plants of the altifolius variety of the Christmas Rose.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, set up ornamental baskets filled with plants of Cyclamen in named varieties. The variety Low's Salmon is of a pleasing shade of the colour indicated. Good types of "whites," "reds," &c., were also represented, as well as some of the "crested" section.

Begonia cheveneyensis, exhibited by Mrs. Alexander, Cheveney, Maidstone (gr., Mr. Chas. Crane), is a large-flowering variety of the type represented by Begonia Gloire de Lorraine. It appears to be very like with plants shown on previous occasions under the name of Marie.

Carnation King's Walden Lady exhibited by S. F. Harrison, Esq., King's Walden Bury, Hitchin (gr., T. J. Heartless), is a perfectly-habited Tree Carnation, with flowers of moderate size, in colour pale yellow and rich pink.

Chrysanthemum Lady Belper, a white-flowered Japanese or decorative variety, shown at the meeting on January 3, was again exhibited by Lady Belper, Kingston Hall Gardens, Derby (gr., Mr. Cooke).

Hæmanthus natalensis was exhibited in flower by Leopold de Rothschild, Esq., Gunnersbury House, Acton (gr., Mr. J. Hudson). As some doubt was expressed in respect to the identity of the plant, it was agreed to refer it to Kew. The flower-spike was rather more than 2 feet long, and Mr. Hudson stated that the species required a less degree of warmth than most other Hæmanthus, open-air treatment in summer being advantageous.

Awards.

Cotoneaster pannosa.—This is a gracefully-habited species from China, with ovate or oblong leaves about 1 inch long, and small red berries produced in clusters at the end of short axillary, growths. The lateral branches from the main stems droop prettily in an arching manner, and would be very useful when cut for decorative purposes. Shown by Messrs. James Veitch & Sons, Ltd. (Award of Merit).

Erica mediterranea hybrida. — This is a hybrid obtained from a cross between E. carnea and E. mediterranea hybrida, said to have been raised by Mr. Smith, Darley Dale Nurseries. In the present instance plants were shown by Messrs. Robt. Veitch & Son, The Nurseries, Exeter. The plants were in flower before the middle of December, and are flowering very profusely at the present time. The highest of the flowering growths were a little more than 1 foot from the ground, and the numerous flowers were of rosy-lilac colour (Award of Merit).

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshay, W. A. Bilney, N. C. Cookson, W. Boxall, W. H. Young, H. A. Tracy, A. A. McBean, W. H. White, G. F. Moore, H. Ballantine, R. G. Thwaites, J. Douglas, E. Ashworth, W. Cobb, H. Little, W. Bolton, R. Brooman-White, and Francis Wellesley.

G. F. Moore, Esq., Bourton-on-the-Water (gr., Mr. W. H. Page), was awarded the Gold Medal for a magnificent group of Cypripediums, Lælia anceps varieties, Calanthes, Sophronitis, &c. The Cypripediums were represented by many fine and rare specimens, all well bloomed and finely grown, and bearing in the aggregate about 350 flowers. The Lælia anceps were plants of the white varieties. bearing together 40 spikes. Among the Cypripediums noted were C. × Mrs. Wm. Mostyn, Chardwar variety, different in habit to Mr. Wellesley's form, which had previously secured a First-class Certificate, but evidently of the same parentage; a fine C. × aureum virginale, C. × nitens Ball's variety, C. × Fascinator, C. × Thompsoni, C. × Troilus, C. × Evenor, varieties of C. × Leeanum and C. insigne, C. × Amy Moore, a very fine hybrid.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a neat group in which the central plant was the noble Cypripedium × Leeanum J. Gurney Fowler, which secured a First-class Certificate (see Awards). At one end was a pan of the new and singular Cypripedium Gratrixianum recently discovered by Messrs. Sander's collector Micholitz. The broad leaves of some of the plants somewhat resemble C. Haynaldianum, the flowers being between those of C. exul and C. × nitens. Others noted were the fine C. × Rolfii stupendum, C. × Phœbe exquisitum, C. × Lady Wimborne, C. × nitens splendidum, C. × Helen II., Dendrobium × Schneiderianum, two fine specimens of D. nobile nobilius, and the pretty and singular Epi-Lælia × Fletcheriana (E. atropurpureum × L. harpophylla). The spikes bore one to three pretty orange-coloured flowers with white labellums tinted with rose.

Mr. J. Cypher, Cheltenham, secured a Silver Flora Medal for a very bright group of good things staged in his customary effective manner. In the centre were a number of good Lælia anceps Sanderiana, many bearing five flowers on a spike, and with them the variety giganteum with the purple middle lobe of the lip much expanded. A fine Cypripedium × Morganiæ bore three spikes; the pretty and distinct C. × Leeanum Cypher's variety, twenty flowers, and others were equally well flowered; C. × nitens Arle Court variety was a good and well-marked form; C. × Lathamianum had twelve blooms, and C. × Madame Jules Hye, C. × Charlesianum giganteum, good varieties of C. × Sallieri and C. × Lilian Greenwood were also noted. Other fine features in Mr. Cypher's group were a very handsome Odontoglossum × crispo-Harryanum, with a grand spike of large white flowers finely barred with purple; and good Lycaste Skinneri alba.

Messrs. Charlesworth & Co., Bradford, received a Silver Flora Medal for a very fine group of hybrid Orchids, in which a good show of the fine orange-and-crimson Lælio-Cattleya × Charlesworthii as usual in the winter groups were the principal feature. Other good hybrids were the new pale yellow L.-C. × Andromeda, L.-C. × Digbyano-Warscewiczii, and other hybrids of L. Digbyana and some Odontoglossums.

M. Chas. Vuylsteke, Loochristy, Ghent, was awarded a Silver Banksian Medal for a small collection of hybrid Odontoglossums, including two good O. × Vuylstekei, one being a magnificent dark variety; two good O. × Wilckeanum, O. × crispo-Harryanum, O. × loochristyense, and a pretty hybrid between O. × crispo-Harryanum and O. crispum.

Messrs. Jas. Veitch & Sons, Chelsea, staged a compact group in which the best things were Cypripedium × Æson giganteum, a bold flower of fine substance; C. × Baron Schroeder, finely blotched with purple; C. × Evadne, C. × Creon, C. × Actæus albida, C. insigne Sanderæ Veitch's variety, a good form raised from seeds; Selenipedium × Pallene (leucorrhodum × Boissierianum), a delicate white flower tinted with pink; and C. × Leucas (Niobe × insigne Sanderæ), which resembles a pale form of C. × Priam.

The Right Hon. Lord Rothschild, Tring Park (gr., Mr. Arthur Dye), sent a large photograph of a magnificent plant of Phalænopsis Schilleriana, natural size. The plant was purchased at the Burton Constable sale, 1881, and it has flowered freely in its season ever since. The specimen, which was photographed at Tring Park, January 9, 1905, bore a flower-spike having seven main branches and eleven secondary branches, with eighty-eight expanded flowers and eleven buds. The two longest leaves were 15½ inches in length by 5½ in width, and the specimen probably the best ever seen under cultivation. The flowers were between 3 and 4 inches across.

De B. Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed the rare Maxillaria Lindenæ, with fine white fragrant flowers, with pink lines on the petals and yellow-and-brown lip.

F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr., Mr. Balmforth), showed the pretty Cypripedium × Venus, C. × Maudiæ magnificum, varieties of C. × aureum, and two other Cypripediums, which secured Awards. Also a specimen of Lælia anceps Sanderiana with several spikes, the best having six flowers.

Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), showed the beautiful Cypripedium × Mrs. Wm. Mostyn, which previously obtained a First-class Certificate; the new Cypripedium × Mrs. Francis Wellesley (Sanderianum × Gowerianum); the very handsome C. × Hera Westfield variety; C. × Dicksonianum (villosum × memoria Moensii), a showy flower having a rose-purple upper sepal with white tip and yellow petals, and lip tinged with red-brown; C. × Cassandra Westfield variety; and Lælia × Clio (glauca × cinnabarina), with yellow flower.

J. Gurney Fowler, Esq., Glebelands, South Woodford (gr., Mr. Davis), showed Cypripedium × Mrs. E. V. Low (insigne × niveum), and the richly-coloured C. × Mrs. Wm. Mostyn, Chardwar variety.

Messrs. Hugh Low & Co., Enfield, staged a small collection, in which was a well-flowered plant of Cypripedium × Minos, Low's variety, with several flowers; C. × aureum virginale, and other Cypripediums; also a good plant of Lycaste Skinneri alba.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. Chapman), showed Calanthe × Magpie (Wm. Murray × seedling), a good dark rose-coloured flower mottled with white; C. × Phœbe (Veitchii × Turnerii), of an uniform light rose colour, and three others which secured Awards.

J. Forster Alcock, Esq., Northchurch, Herts (gr., Mr. Foster), sent Cypripedium insigne Northchurch variety.

Messrs. Duchesne Lanthoine & Co., Watermael, Belgium, showed a form of Cypripedium insigne with a clear greenish-yellow flower with white upper half to the dorsal sepal.

Awards.

FIRST-CLASS CERTIFICATE.

Cypripedium × *Leeanum* "*J. Gurney Fowler*," from Messrs. SANDER & SONS.—The most massive form of C. × Leeanum, and with the thick substance of C. × aureum. Dorsal sepal broader than high, pure white with a small green base and median purple line; petals and lip broad, cream-white tinged and marked with purple, the petals having a distinct sulphur-white margin.

Calanthe × *Chapmanii* (× burfordiense × Oakwood Ruby).—The perfection of the clever work on Calanthes at Oakwood. Flowers deep crimson, with a small, lighter eye. A finely-shaped flower and of large size. Quite the most gorgeously coloured Calanthe.

AWARDS OF MERIT.

Cypripedium × *San-Actæus* (insigne Sanderæ × Actæus), from NORMAN C. COOKSON, Esq. — An attractive hybrid, with greenish flowers, excepting the greater part of the dorsal sepal, which is pure white.

Odontoglossum × *mirificum* (luteo - purpureum sceptrum × crispum), from NORMAN C. COOKSON, Esq.—A well-formed flower, cream-white, profusely marked with chestnut-brown colour.

Lælio - Cattleya × *Charlesworthii magnifica*, from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A great improvement on the original form. Flowers reddish-orange, with claret-red labellum, veined with gold.

Cypripedium × *G. F. Moore* (Mrs. Wm. Mostyn Chardward variety × Sallieri aureum), from G. F. MOORE, Esq. (gr. Mr. Page).—A magnificent hybrid, which will still further improve. The flowers partake of the character of C. Sallieri, but the large dorsal sepal is cream-white, with a few purplish markings. The texture of the flower is wax-like and its surface glossy.

Cypripedium × *aureum* ("The Shrubbery variety"), from F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth).—A very large and finely-formed flower; greenish-white tinged with purple, the greater part of the upper sepal pure white.

Cypripedium × *Lawrebel* ("The Shrubbery variety"), from F. MENTEITH OGILVIE, Esq. — Flower almost wholly purplish-crimson, changing to rose towards the white margin of the dorsal sepal.

Cattleya × *Octave Doin* (Mendeli × Dowiana aurea), from Messrs. CHARLESWORTH & Co., Bradford. A pretty flower with blush-white sepals and petals, and ruby-crimson lip veined in the throat with yellow.

CULTURAL COMMENDATION

to Mr. H. Alexander, Orchid grower to Captain G. L. HOLFORD, C.I.E., Westonbirt, for a grand plant of Odontoglossum × Adrianæ var. Countess of Morley, with many flower-spikes.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq., in the Chair; and Messrs. Jas. H. Veitch, F. Q. Lane, Geo. Kelf, Alex. Dean, S. Mortimer, W. Bates, J. Cheal, H. Parr, W. Fyfe, Ed. Beckett, J. Willard, O. Thomas, J. Jaques, Geo. Norman, and Jas. Gibson.

As usual there were several dishes of Apples presented for Awards, one variety Round Winter Nonsuch being found to have received an Award several years ago, while none of the other varieties presented was up to the standard required by the Committee.

W. H. LONG, Esq., M.P., Trowbridge, Wilts (gr., Mr. W. Strugnell), staged thirty dishes of Apples, the examples generally being well developed and of excellent colour (Silver Banksian Medal).

A collection of local and but little known Apples was sent by R. C. APPLETON, Esq., Bar House, Beverley, Yorks. Many of the varieties had but little to commend them judging from their appearance, and no doubt the majority of the names could be traced as synonyms of well-known varieties, which is usually the case with Apples having local names. Those that especially appealed to us were the varieties labelled Boston Russet, Newland Sack, Forester (a pleasing culinary variety), and Honey.

Sir W. D. PEARSON, Bart., M.P., Paddockhurst, Sussex (gr., Mr. Wadds), presented a box of Sutton's Winter Beauty Tomato. The fruits were well finished, and the grower was given a Cultural Commendation.

Mr. H. J. JONES, nurseryman, Lewisham, set up an extensive exhibit of Potatos, staging 130 varieties. As fancy baskets and a white table-ground were used for their display, they made an imposing exhibit and attracted much attention. Most of the newer varieties that have been so much in evidence recently were included, also the latest novelty from America, Noroton Beauty, which has acquired a considerable reputation in the United States.

Lecture on Fruit Preserving.

In the afternoon the Assistant Secretary (Mr. THOS. E. SEDGWICK) delivered a lecture on "The German Methods of Fruit Preserving." Mr. J. L. WOOD occupied the Chair.

After pointing out that by the term "preservation of fruit" are understood various means for carrying over the overplus of one season or one year for use in another, when the fruits or vegetables in question cannot be obtained in a fresh state and in sufficient quantities, the lecturer pointed out that while there was a great number of books devoted to the subject in German, and a few in French, there was no handbook or compendium on fruit-preserving in the English language.

The German Government's efforts to encourage and aid both fruit-growing and the disposal of the crop to the best advantage were mentioned. These included State Loans, Acts of Parliament, and large expenditure on Government Fruit Schools, the principal of which was the Royal School of Garden, Fruit, and Vine-culture at Geisenheim, on the Rhine.

The thoroughness and attention to details evinced by Germans in all their undertakings was next exemplified by the care with which they gathered, stored, packed and despatched their fruit crop, and treated the overplus of fresh fruit for preserving.

A series of German labour-saving machines was exhibited; some removed a fine shaving of peel from Apples or Pears, some also cored and ringed them at the same operation, some were designed to cut Beans and other vegetables in uniform slices, but the machine which attracted the most attention was a small domestic "Gnom" evaporator, which could be placed over an ordinary kitchen range, and thus be applied to dry the fruit or vegetables by means of the waste heat of the range. The form of this machine was extremely simple; an iron frame was filled with wooden trays, each of which had a wire bottom, thus allowing the hot air to pass through all the trays and to remove the moisture from the tissue of the fruit laid thereon. This water could be restored by soaking the dried material in water, but care should then be taken to cook it in the water in which it had been soaked. The larger factory machines were also mentioned.

The various systems of bottling and tinning at present practised in Germany were described, and a series of vacuum and screw-stoppered glass bottles and solderless tins was shown and the methods and advantages of their respective use described.

Considerable stress was laid on the care that the Germans always take in placing foods on the English market to ensure their being uniformly graded, of recognised good quality and flavour, and carefully packed in their bottles without too much juice or sugar solution either above or below the body of the fruit.

The absence in Germany of jam or marmalade as understood by us was replaced by three methods of preparation, named marmalade, must (pulp), and mark (marrow), all of which were treated in a similar manner, but with varying quantities of added sugar and different extent of boiling. The fruit is boiled, and when soft is forced through a sieve, and the pulp thus derived is again boiled and then potted for use. In Germany the skins, cores, and oddments of fruit are often treated together so as to avoid waste, and the product sold for household purposes. The Germans were, however, already studying the English systems of jam-making, doubtless with an ultimate eye upon our own markets.

The experiments and reports which had already been made as to various methods of fruit preserving in this country were summarised, and it was noted that absence of large fruit and vegetable-drying factories in our own country compelled the English Government to spend millions of pounds in Germany during the late South African war.

The formation of the National Fruit Growers' Federation and of the National Fruit and Cider Institute, and the appointment by the Board of Agriculture of a Departmental Committee on Fruit, all tended to show that our fruit industry was waking up to the great possibilities of the future; and the exhibition of jams and bottled fruits in the Royal Horticultural Hall in December, 1904, had shown that the English are still able to preserve fruit in a manner which will compare favourably with that of our Continental rivals, who on that occasion failed to send a single exhibit, and thus we should look forward with confidence to the time when all our dried and bottled fruit and jams are home-grown and home-preserved, and all fresh fruit required for our markets in the colder seasons will be provided by the Colonies of our Empire.

NATIONAL POTATO.

WE extract the following particulars from the Report of the Society's Proceedings in 1904:—

AN ELECTION OF POTATOS.

In view of the number of applications received for advice as to the choice of Potatos for various purposes, it was decided to institute an election among members of the Society, with a view of ascertaining what the majority of the experts thought about the matter.

A form was issued, the result of which is tabulated herewith.

The varieties are shown in order, according to the number of votes they received. Where certain varieties are bracketed they received an equal number of votes.

A few comments on the returns may be of interest.

(1) The presence of Royal Kidney, Factor, Sir John Llewelyn, and Northern Star, in section after section, proves the sterling all-round merit of these sorts.

(2) Mr. Findlay's varieties loom largely throughout.

(3) The appearance of Evergood at the head of three sections proves that in spite of the disappointing results of which some growers have complained, it is a variety to be reckoned with, especially for damp, heavy land. On strong clay in the Secretary's garden it has thriven splendidly.

(4) King Edward VII. is the most popular coloured Potato.

(5) The prominence of Langworthy in the best-for-flavour section will draw merited attention in England to a variety long esteemed in Scotland for its cooking qualities.

(6) Up-to-Date is declining in general favour.

(7) Discovery, as a very late-growing disease-resister, earns the praise of many shrewd growers.

(8) The total number of varieties which received votes was as follows:—Section 1, 82; Section 2, 91; Section 3, 61; Section 4, 62; Section 5, 42; Section 6, 44; Section 7, 24; Section 8, 23; Section 9, 43; Section 10, 48; Section 11, 53; Section 12, 60. It had been hoped to publish the names, but the number is too great.

(9) Owners of meritorious novelties will doubtless be of opinion that their specialities deserve precedence over certain of the varieties herein honoured. Probably this is so, deserving novelties will come to the front in due course. This election does not in any way prejudice them; it serves the purpose of giving the large number of Potato growers who cannot afford to buy expensive novelties a useful guide to the best standard sorts. From this point of view it admirably serves its purpose.

THE BEST DISEASE-RESISTING POTATOS.

1 Evergood (Findlay)
2 Discovery (Sutton)
Royal Kidney (Findlay)
4 Northern Star (Findlay)
5 Sir John Llewelyn (Harris)
6 King Edward VII (Butler)
7 Eldorado (Findlay)
8 Factor (Dobbie)

THE BEST POTATOS FOR FLAVOUR.

1 Langworthy (Niven)
Sir John Llewelyn
Factor
4 Royal Kidney
5 Evergood
6 Duchess of Cornwall (Kerr)
Snowdrop

THE BEST POTATOS FOR HEAVY LAND.

1 Evergood
2 Royal Kidney
3 Northern Star
4 Factor
Up-to-Date (Findlay)
6 Duchess of Cornwall
7 Langworthy
Windsor Castle (Sutton)
Sir John Llewelyn

THE BEST POTATOS FOR LIGHT SOIL.

1 Sir John Llewelyn
2 Northern Star
3 Evergood
4 Factor
Royal Kidney
King Edward VII.
5 British Queen (Findlay)
Duke of York (Daniels)

THE BEST WHITE ROUNDS FOR EXHIBITION.

1 Windsor Castle
2 Northern Star
3 Cigarette (Kerr)
Snowball (Carter)

THE BEST WHITE KIDNEYS FOR EXHIBITION.

1 Sir John Llewelyn
2 Royal Kidney
Satisfaction (Sutton)
Snowdrop
Duke of York
Factor

THE BEST COLOURED ROUNDS FOR EXHIBITION.

1 Reading Russet (Sutton)
2 Vicar of Laleham
Dean
Herd Laddie

THE BEST COLOURED KIDNEYS FOR EXHIBITION.

1 Mr. Bresee
2 King Edward VII.
3 Edgecote Purple

THE BEST FIRST EARLY POTATOS.

1 Sir John Llewelyn
2 Duke of York
3 Sharpe's Victor

THE BEST SECOND EARLY POTATOS.

1 British Queen
2 Royal Kidney
3 Sir John Llewelyn

THE BEST MAINCROP POTATOS.

1 Evergood
2 Factor
3 Royal Kidney
4 Duchess of Cornwal
Northern Star

THE BEST LATE POTATOS.

1 Northern Star
2 Discovery
2 Up to-Date
4 Factor
Goodfellow (Findlay).

TRIALS IN 1904.

In the spring of 1904 it was decided to select ten representative varieties and plant them in different districts, s that they could be tested on various soils simultaneously. The results of those trials are given in three tables.

GENERAL REMARKS SUMMARISED FROM THE RETURNS.

Yield. The two varieties which came out at the top are Factor and Up-to-Date, Factor being first at seven centres, Up-to-Date at six. The returns would indicate that these two varieties are equal in cropping power; but two unaccountable failures are recorded against Up-to-date at Edmonton and at Cresswell, Stoke-on-Trent, which reduce its position considerably in the average returns per acre. Many of the growers report that these two varieties appear to be identical in growth and habit. Doubtless the dry season has much to do with the excellent results yielded by the old Up-to-Date, which has always been a dry-season Potato.

Royal Kidney and British Queen come next in order, each being the heaviest cropper on two occasion. Both varieties cropped well, but the evidence points to these being distinctly inferior in this respect to Factor and Up-to-Date.

Immediately behind them came Evergood and Cramond Blossom, which are almost exactly equal. The season did not seem to suit Evergood, whereas Cramond Blossom grew vigorously, but was rather disappointing when lifted, having suffered much from growing out.

King Edward VII. gave about the same average crop, and on one occasion came out first among all the varieties by a few marks.

Empress Queen did badly, but the fault in many cases lay with the seed, which was not satisfactory of either this variety or King Edward VII.

The last two varieties, Sir John Llewelyn and Ninety-fold, ought not properly to be considered alongside the others; they are early varieties, and should be treated on different lines from the other maincrop varieties. The seed of these two varieties was not very good.

Indeed the whole value of the trials is somewhat affected by the indifferent character of the seed available in 1904, complaints were general of blanks, and some varieties suffered much more than others.

If the trials are repeated in 1905 with the seed derived from the 1904 trials better results will accrue.

Incidence of Disease.—The disease of 1904 came late, but was pretty general. Details were not always furnished of the amount of diseased Potatos, but the following list shows the totals obtained by adding the records together from all of the centres which gave particulars:—

	lb.		lb.
Cramond Blossom ...	230	Royal Kidney	32
British Queen	153	Evergood	30
Up-to-Date	145	King Edward VII. ...	20
Factor	116	Empress Queen ...	13

Thus Royal Kidney gives comparatively the best result.

Flavour.—The reports are so conflicting that no general conclusions can be drawn.

Northern Star.—Of the varieties tried on a small scale Northern Star was generally reported disappointing, yielding a large number of small tubers and with rhizomes that travelled extensively.

Discovery, of which 1 lb. was kindly furnished to each centre by Messrs. Sutton & Sons, was slow to start and never completed its growth, remaining green and vigorous when the haulm of all other varieties had died down. The yield proved disappointing, but each centre has now material for a further test in 1905.

Eldorado.—The plants of Eldorado kindly supplied to a few centres by Mr. W. J. Malden never quite recovered from the shock of transplanting, an operation which was followed by some rather trying weather. Not being specially nursed, in most cases the yield was not heavy, but each centre has now some home-grown seed for a proper trial in 1905.

TRIAL FORMS.

In addition to the centres tabulated, trials were conducted in Shropshire. Copies of blank trial forms may be had free from the Secretary by anyone wishing to conduct trials in 1905.

MEETING OF THE GHENT CHAMBRE SYNDICALE.

JANUARY 8. — At the meeting of the Chambre Syndicale des Horticulteurs Belges, at Ghent, on the above date, the following Awards were made:—to M. M. Janssens & Putzeys of Merxem-Anvers (*par rappel*), for Cypripedium aureum var. virginalis; for C. confetti (C. Spicerianum superbum × C. insigne Walacei); for C. Admiral Togo (C. Sallieri × magnificum × C. Boxalli atratum) (*à l'unanimité*); for C. Janssensi (C. Spicerianum × C. villosum aureum, and for Lælia albida (*à l'unanimité*); to M. F. Lambeau, of Brussels, for Cypripedium Albertiano-nitens var. F. Lambeau; for C. aureum Etcocle; for C. Albertiano-nitens var. superbum (*à l'unanimité*); for C. de Langheanum (*par rappel*); C. auriferum, C. Madeleine, C. Spiceriano-nitens. C. Albertiano-nitens, C. Albertiano (C. Chantini × C. Sallieri Hyeanum) (*avec félicitations du Jury*); for C. Acheron, Cattleya Trianæ var. (*à l'unanimité*), and for C. Trianæ. M. C. Vincke-Dujardin of Bruges, obtained similar Awards for each of the following Orchids: Cattleya Trianæ Mlle. Suzanne Vincke (*avec félicitations du Jury*); for C. Trianæ (three separate specimens). Lælio-Cattleya Cinno-Warneri (L. cinnabarina × C. Warneri) was staged by M. F. de Bièvre, head gardener at Laeken Palace; Cypripedium Elmireanum superbum, by M. Pynaert van Geert; Cattleya Trianæ, by M. Praet; Lælia Finckenniana (L. albida × anceps Sanderiana), hyb. nat., by the Marquis de Wavrin, and Lælia anceps Amesiæ, by the same exhibitor (*à l'unanimité*).

Certificates for superior cultivation and flowering were allotted for Lælio-Cattleya Bièvreanum (L. crispo × C. Rex), from M. F. de Bièvre; Cypripedium nitens var. Houtteana, from M. de Schryver-Block, and for Cattleya Trianæ from M. Vincke-Dujardin.

The following Honourable Mentions were given: for Cypripedium Damyre (C. Sallieri × C. insigne Chantini), from MM. Janssens & Putzeys; for C. aureum Ibis and C. aureum Cyrus, both from M. F. Lambeau; and for C. Trianæ from G. Vincke-Dujardin; and C. Trianæ, from M. E. Praet.

In the Second Section of the Exhibition M. Th. de Martelaere obtained a Certificate of Merit for Carnation Mme. Th. de Martelaere; M. Pynaert van Geert, a Certificate for cultivation and flowering of Cyrtoceras reflexum, and M. L. de Smet Duirirer, Cultural Certificates for Ficus pandurata and for F. neriifolia.

GARDENERS' ROYAL BENEVOLENT INSTITUTION. (See also p. 56.)

Report of the Committee for the Year ending 1904.

JANUARY 19.

"IT is with much pleasure the Committee present their Annual Statement, with accounts (as audited) for the year 1904. They desire to express their gratification and thankfulness at being able to report the continued success of the work which has for its object the permanent and also the temporary assistance of a class who, before being overtaken by misfortune, declining years, or other causes, do so much for the necessities and pleasures of others.

At the commencement of the year 207 pensioners—being three more than at the beginning of the previous year, 121 men and 86 widows—were each receiving, for life, £20 and £16 a year respectively, involving an annual liability of £3,796. During the year 17 of that number have died—11 men and 6 widows—whilst one man has relinquished the pension in consequence of a change in his circumstances, and one widow has been removed to an asylum, owing to her mental condition, thus creating 19 vacancies. Of this number two were filled in by the Committee in accordance with Rule III., 13 being widows whose distressing circumstances rendered them eligible for the allowance of £16 a year. The number of pensioners, therefore, at the end of the year was 190, and the Committee recommend the increase to-day of that number by the election of 18 from a list of 56 approved applicants, as set forth in the voting papers, making a total of 208 pensioners, the largest number of beneficiaries on the funds in receipt of annuities for life at any period in the history of the Institution.

The Committee are keenly sensible of the pressing needs of the many applicants appealing for aid, and heartily wish they were justified in extending the benefits of the Institution to a much larger number.

The anniversary festival dinner, held in June last, was a very great success, a large sum being raised on behalf of the funds. This result was mainly due to the well-deserved popularity of the Treasurer (Harry J. Veitch, Esq.), who occupied the chair on the occasion, and whose convincing and able advocacy of the claims of the Institution, his untiring zeal and devotion to its cause, met with so ready and gratifying a response from all parts of the United Kingdom; in consequence of which a much-needed further sum of £1,000 has been added to the 'Victorian Era Fund.' The Committee tender to Mr. Veitch their most grateful thanks for his services and liberality on this as on all other occasions in connection with the cause. They further desire to place on record their deep sense of indebtedness to Mr. Veitch for his kindness and generosity in compiling and issuing, at his own expense, a 'History of the Institution,' which has already proved of much benefit in creating and sustaining interest in the work.

The Committee have also to express their sincere thanks to those gentlemen who acted as stewards and collectors in connection with the Festival; to the donors of fruit and flowers; to Mr. James Hudson for superintending the decoration of the tables; to the Horticultural Press for its valued gratuitous services and to other helpers in all parts of the country, whose kind and practical aid is sincerely appreciated.

The Committee have to report the receipt, with grateful thanks, of a legacy of £100 from the late Mr. Herbst, of Richmond, who for many years was a warm supporter of the Institution.

The several auxiliaries have again proved of much value as adjuncts to the work, and the Committee most gratefully thank the honorary treasurers and secretaries whose names are hereby mentioned, to whose exertions the success attained is mainly due:—

Presidents.	*Hon. Treasurers.*	*Hon. Secretaries.*
BRISTOL AND BATH.		
J. H. Lockley, Esq.	W. A. Garaway, Esq.	Mr. Geo. Harris.
WORCESTER.		
Rt. Hon. Earl Beauchamp, K.C.M.G.	J. Hill White, Esq.	Mr. Percy G. White.
DEVON AND EXETER.		
C. R. Collins, Esq.	Mr. W. Mackay.	Mr. W. Mackay.
WOLVERHAMPTON.		
C. T. Mander, Esq., J.P.	Mr. Bradley.	Mr. R. Lowe.
BERKSHIRE, READING AND DISTRICT.		
Robert Grey, Esq.	Arthur W. Sutton, Esq., J.P., V.M.H.	Mr. H. G. Cox.
LIVERPOOL AUXILIARY.		
Col. the Rt. Hon. the Earl of Derby, K.G., G.C.B.	A. J. Crippin, Esq.	Mr. R. G. Waterman.

Acknowledgment is also made, and sincere thanks tendered, to the "Hurst & Son" Musical Society (Edward Sherwood, Esq., President) for their kindness in allocating the proceeds of a dramatic performance given on behalf of the funds; to Mr. A. J. Brown, of Chertsey; and to the Gardeners' Mutual Improvement Society at Altrincham, for organising successful concerts in the same cause.

The Committee would also refer to the kindness of Arthur W. Sutton, Esq., in contributing the sum of £20 to pay a year's pension to W. Smith, the highest unsuccessful candidate at the last election, whose case was of a most necessitous character. This candidate has recently died, but the help afforded by Mr. Sutton's timely generosity was a source of much comfort to him.

Efficient aid in making the claims of the Institution more widely known was rendered by Leonard Sutton, Esq., who gave a handsome donation expressly for that purpose with very gratifying results. The Committee offer these gentlemen their most cordial thanks.

The "Victorian Era Fund" and the "Good Samaritan Fund" still continue to be the means of providing much needed benefits. The Committee have been able during the past year to distribute from the first-named Fund the sum of £159 2s. to the unsuccessful candidates at the last election who had formerly been subscribers in amounts proportionate to the length of time they had subscribed, and £90 has been given from the latter Fund to numerous applicants, whether subscribers or not, who were found to be in urgent want of temporary assistance.

The Committee cannot emphasise too strongly the value and usefulness of these two Funds; from the one they are enabled to help the "waiting" candidate, who, but for its aid, would receive no assistance until elected on the permanent funds, and from the other they are able to bestow gratuities in cases of emergency and need. It is a matter for thankfulness, as already mentioned, that the Committee have been able to add £1,000 to the capital of the "Victorian Era Fund," thus increasing its annual income and providing a larger sum for yearly distribution.

The Committee, with very great pleasure, draw attention to the munificent gift of £500 from N. N. Sherwood, Esq. (trustee), for the purpose of founding a pension to be called the "May Sherwood Campbell" Widow's Pension. The Committee most gratefully thank Mr. Sherwood for his benefaction and for this further proof of his continued practical sympathy in the work by specially providing for a widow's declining years.

As in the previous reports the Committee have again to deplore the loss, through death, of many staunch friends and supporters in the past year.

Foremost amongst them may be mentioned the Very Rev. the Dean of Rochester, and Mr. S. Osborn.

Dean Hole had been associated with the Institution for many years. He presided at the Anniversary Festival in 1872, and had often been present at subsequent Festivals, making eloquent and touching appeals on its behalf. In season and out of season he was ever ready to evince his sympathies with the work. His loss will be keenly felt, and his kind and valued services will ever be gratefully remembered.

Mr. Osborn had been a member of the Committee of Management since 1886, and was a regular attendant at its meetings; a practical gardener himself, and one who had for so long taken an active part in the affairs of the Institution, his experience and opinions were much valued by his colleagues, by whom he will be greatly missed.

The Committee are glad to be able to announce that the Duke of Westminster has kindly consented to preside at the sixty-seventh Anniversary Festival Dinner, to take place on June 16 next, at the Whitehall Rooms, Hôtel Métropole. They trust His Grace will receive a large measure of support on the occasion, and that the Festival will prove as successful on behalf of the Institution as those hitherto held.

In conclusion, the Committee earnestly solicit increased support to their work. At the close of to-day's election there will be thirty-five applicants left on the list who are appealing for permanent aid, some of whom are blind. To assist them an additional income is required, and whilst not lacking in thankfulness for the means placed at their disposal in the past, the Committee again plead for renewed effort, so that with a larger income they may feel warranted in extending the benevolence of this National Horticultural Charity to a greater number of those who "justly lay claim to its help."

BALANCE-SHEET, 1904.

To Balance		£1,027 16 4
Amount on Deposit		3,265 10 0
Annual Subscriptions... ...	£1,653 0 6	
Donations at, and in consequence of, Festival Dinner, including Collecting Cards	2,915 13 10	
Special Donations, N. Sherwood, Esq.	500 0 0	
Legacy, the late H. Herbet, Esq.	100 0 0	
Return of Income Tax... ...	35 7 7	
Advertisements in Annual Report	46 18 6	
Dividends and Interest ...	865 3 6	
		6,117 3 11
		£10,410 10 3
By Pensions and Gratuities ...		£3,703 18 8
Expenses of Annual Meeting and Election		12 16 6
Rent, Cleaning, Firing, Lighting, &c., including Salaries of Secretary and Clerk ...		516 7 5
Printing, including Annual Report and Polling Papers...	114 7 2	
Stationery, including Cheque Books	25 8 5	
Advertisement in Fry's Charities	3 3 0	
Festival Dinner Expenses ...	43 17 9	
Postages, including Annual Reports, Polling Papers, &c. ...	57 2 0	
Travelling Expenses	4 19 10	
Carriage, Telegrams, Insurance, and Incidental Expenses	14 10 11	
Bank Charges	0 3 3	
		263 7 4
Amount invested and transferred to the "Victorian Era Fund"	1,000 0 0	
Amount Invested (N. Sherwood, Esq's. Special Donation) ...	500 0 0	
		1,500 0 0
Placed on Deposit, including Legacy		3,365 10 0
Balance with Treasurer... ...	1,046 6 7	
Balance with Secretary	2 3 9	
		1,048 10 4
		£10,410 10 3

We, the Auditors of the Gardeners' Royal Benevolent Institution, have this day examined the Books, together with the Bankers' Certificate of Securities deposited with them, and found everything correct. We also wish to state that the books are exceedingly well kept.

(Signed) THOMAS MANNING.
T. SWIFT.
J. WILLARD.

Jan. 17, 1905.

VICTORIAN ERA FUND, 1904

To Balance, Dec. 31, 1903... ...		£140 19 1
Donations	£67 15 0	
Dividends	125 7 9	
Return of Income Tax... ...	6 9 9	
		199 12 6
		£340 11 7
By Gratuities	£159 2 0	
Balance Dec. 31, 1904	181 9 7	
		£340 11 7
		£340 11 7

GOOD SAMARITAN FUND, 1904.

To Balance Dec. 31, 1903		£253 9 4
Donations, 1904	£19 1 0	
Dividends	54 6 6	
Return of Income Tax... ...	2 16 4	
		76 3 10
		£329 13 2
By Gratuities	£90 0 0	
Balance Dec. 31, 1904	239 13 2	
		£329 13 2
		£329 13 2

Audited and found correct.
(Signed) THOMAS MANNING.
T. SWIFT.
J. WILLARD.

Jan. 17, 1905.

SOCIETY FOR HORTICULTURAL SCIENCE.

THE Society for Horticultural Science met at Philadelphia, Pa., during the annual meeting of the American Association for the advancement of science, on December 27 last, and had a very successful gathering. There was a good proportion of the members present, and several important papers were presented, of which abstracts are given below. One of the sessions took the form of a union meeting with the Society for Promoting Agricultural Science, and the addresses of the two Presidents were listened to by the combined audiences.

WHAT IS HORTICULTURE?

Dr. L. H. **BAILEY**, Dean of the College of Agriculture at Cornell, in his address discussed the problem "What is Horticulture?" He took up the question of the growth of horticulture as a specialized subject. It had originally begun as an offshoot from botany. It was a growing interest and would in the future become more and more sub-divided. Horticulture joins hands with the plant biologists on the one hand, and with business on the other. Horticulture is contributing greatly to our national wealth; it supplies important foods. He felt that the work in the future would be not to develop so much something we can name so much as something we can measure—to make better plants and to enable cultivators to improve the plants they now grow. Then there was the art side of the subject, covering the whole ground of rural improvement and home adornment. The day must come when each home would have its plant room, not necessarily indoors, just as it now had its library. In the teaching of horticulture in the colleges there must be greater segmentation, and the subject would break up differently in different parts of the country, according to the condition of affairs. There were many commercial sides, each of which needed a specialist. Botany has declined to extend its sphere to subjects that come too near to real human affairs, and has left a larger part of its domain uncultivated. Horticulture has seized this territory: it should hold it.

ORCHARD CULTURE.

Professor **JOHN CRAIG** discussed the value of an orchard survey, the purpose being to ascertain the causes underlying failure or success, aside from the personal question involved. In other words, to ascertain the underlying fundamental principles of orchard management by an actual analysis of practical conditions. The conclusions often arrived at by the investigator did not carry the weight they deserved, very often because the volume of facts dealt with was too small to make an impression on the practical grower. He felt that if these facts could be gathered from the field and orchard on a larger scale—take an entire county, for instance, and map its orchards—they would have a much better reception from the practical man.

THE HORSE BEAN.

Professor W. T. **MACOUN**, of Ottawa, Can., reported on the value of the Horse Bean as a cover crop in rows.

POTATOS.

H. J. **EUSTACE**, of the New York station, reported some successful results in the breeding of Potatos for increased yield. He showed the possibility of enormously increasing the Potato crop of the country by breeding stock for seed. In a field of one variety the yield per hill varied enormously—from 16 to 53 ounces. From 100 hills the 25 heaviest and 25 lightest were selected. The process was continued till 125 hills of each were had. These were duly planted and given good ordinary care and attention. The crops gathered were uniformly in accord with the ancestry. The average yield from the 10 rows heavy seed hills was 362 bushels 15 lb. per acre; that from the light seed hills (5 rows), 339 bushels 10 lb. per acre—a gain of 23 bushels 5 lb. per acre of marketable tubers.

HORTICULTURAL WORK.

Professor **JOHN CRAIG**, of Cornell, drew attention to a great number of questions that were still unsolved in horticulture and suggested that the Society could with advantage evolve some plan of co-operation of its members, looking to the simultaneous work on a problem in different parts of the country. He endorsed research work along the lines laid down in the paper of Professor Hedrick; also the influence of stock on scion and the reverse; again, how does the stock influence the fruit? How can we secure definite variation? True, these cannot be answered in the lifetime of the individual, but the individual must begin in order that the institution shall continue.

THE ELECTRIC LIGHT.

Professor C. P. **CLOSE** detailed recent experiments in the growing of plants in the new Cooper-Hewett mercury-vapour electric light, which had been made at the Delaware station. The 4-H pattern lamps were used. The rays have no red in them and looked at through a red glass no light can be seen. The candle-power of each lamp is about 650, and the expense per candle is about one-eighth that of the candle-power of the incandescent light and about three-fourths that of the arc light. Grand Rapids and Boston Market Lettuces were used in the experiment; seeds sown December 14. These were put into a chamber from which daylight was excluded, after they had made four to six leaves, all of which were removed. Plants from a sowing on January 25 were also put in at the same time. These had four small leaves and they were left on. The cultural conditions were not of the best, as regards ventilation and heat during the growing or lighted part of the twenty-four hours; it was at night that the light was on. Of the first setting all were lost by disease except a dozen immediately beneath the light. Radishes were also grown. From a commercial view the experiment was not a success. Chlorophyll was formed, but the plants made a very spindly growth. The object in view was the utilisation of basement barns, and under more favourable circumstances the results must be better.

In the course of a discussion it was the feeling that the light might be used as a supplement to natural daylight in forcing salad plants during the "dark days" of midwinter.

DEFINITION OF VARIETIES.

The importance of co-ordinated variety tests, a subject that received the serious attention of the Society at the St. Louis meeting, was again brought up in the two papers of Professor L. C. **CORBETT** and Professor W. W. **TRACY**, both of the Department of Agriculture. The first-named described a system of variety record blanks, which had been devised and had been in use for two years, and the further use of which he felt would tend to properly classify garden varieties in vegetables, and make the introduction of spurious novelties less likely to occur. The great need at present was to arrive at a definite understanding of what really constituted a horticultural variety, as the general trade descriptions, in many cases, dealt with generalities and, in some cases, could actually be reversed. The descriptions of two Tomatos, Stone and Success, were cited. It is evident that neither seed-growers nor the producers of exhibition plants have any fixed notion regarding varieties. This shows the necessity of carefully executed descriptive records. It was stated that the stocks used for these co-ordinated variety tests should have a common origin and be grown under the same environment long enough to have been properly fixed.

Professor **TRACY**, in his paper, emphasised the necessity of having a distinct varietal type to adhere to in seed-growing. He told of many confusing cases as one in which there were two types of Melon in the introduction of a new variety; one grower had selected his stock to the green type, another to the white rind type. The importance of minute distinctions from the practical standpoint was great, as in Lettuce, where a difference in texture of leaf meant a better forcing variety, but grown outside there was no difference discernible. There were three distinct types of Refugee Wax Bean in the American seed trade to-day. The same thing was true in other vegetables. This instability of type has led to substitution being looked upon lightly in the seed trade. Horticulturists should demand from the introducer of a new variety a distinct and accurate description of what he considers the type to which it should be grown, and this should be rigidly adhered to in the growing of seed to be sold under that name.

A Commitee of the Society was appointed to make an investigation of this whole subject, to report at the next meeting of the Society, the two presentors of the papers being named with power to add to their number.

CARNATION.

Mr. **JESSE B. NORTON**, of the Department of Agriculture, told of some recent experiments that are being carried on there in the breeding of Carnations, and exhibited a number of seedling flowers to illustrate his deductions on the application of Mendel's law to the breeding of such. He classified the seedling flowers into three groups, as single, semi-double, and double. What he calls semi-double are the typical florists' flowers; the doubles embracing the split calyx, and monster flowers, which an investigation showed have all the stamens transformed into petals. In the semi-doubles they are not so modified, hence do not burst the calyx. In the seedlings of one capsule all these types are represented in a seemingly regular proportion. Thus the following figures were given as actual records:—

double 6	total 28	double 74	total 273
semi-double 15		semi-double 147	
single 7		single 52	

Other characters also coincided with these figures as, for instance, the matter of odour. According to the law we should expect to have the progeny of a hybrid separate into the dominant and recessive types in the proportions of 1, 2, 1. This, we find, very nearly approximated by the figures given above. As a suggestion to the practical florist he asks, "Would it not be well to cross the single and the extreme double types, rather than always selecting both parents from the standard types, as by that method there should be a greater proportion of true florists' type produced—that is, if Mendel's law holds?" The work has only just commenced at Washington, and these suggestions were but the inferences drawn from an examination of the results so far obtained.

Plant Associations.

In an interesting paper on the relationships of plants in the orchard, Professor U. P. **Hedrick**, of Michigan, opened a very important topic. He urged the necessity of studying the growing relationships of plants as cultivated for economic purposes, especially in regard to the orchard. It had been demonstrated long ago that certain species of grasses did best when grown together. Mr. Spencer Pickering, in England, had conducted recent experiments on the effect of grasses grown about Apple-trees. Thistles are said to poison Oats; and the Peach and Potato do not do well together. May not plants affect the soil organisms? A knowledge of the societies of cultivated plants should help us in the study of climate and soils in fruit growing. In botany we give definite names to plant societies; we speak of this or that flora and all understand: horticultural floras are just as real. We need to have them named and classified. Plants are not passive to the attacks of parasites; they make every effort to resist, and by a better understanding of the relationship of host and visitor we can help the plants of the farm and garden to throw off their foes. A study of weeds would be beneficial; weed floras would act as a guide to the adaptability of the soil for certain crops. And an understanding of the relationships would be helpful. Chickweed, which grows after the trees have made their growth, acts as a first-class late cover crop for an orchard. An orchard at Brigham City, Utah, an orchard under irrigation, had Peach trees in which catch crops were grown, and the speaker could tell, almost from the appearance of the foliage, what catch crop had been grown there. The effects of the intermingling were very pronounced. In pot experiments at the Michigan station now under way, Peach-trees were grown in pots, and various other plants with them. Elberta was the variety of Peach. Thirty trees were selected. Fertilisers were added and good drainage provided. The pots were sunk to the brims in coarse cinders. The plants were set 6 feet apart each way, watered as necessary, and not pruned. Three pots were in each test. Potatos, Tomatos, Oats, Rye, Rape, Mustard, crimson Clover, Peas and Beans were the catch crops planted in the pots. Leaves on the trees with Oats and Rye were the smallest and fewest in number. These trees were the earliest to mature. The effects were most noticeable with the Oats. The Potato pots and the Tomato pots suffered next in order, as named in the foregoing respects. The yellowing of the foliage was not nearly so noticeable with the Solanums as with the grains. Next in degree came Mustard, then Rape, followed by the check trees, and most vigorous of all was the crimson Clover pots. The Peas did not make a growth.

Sulphur Washes.

Sulphur washes for orchard treatment were discussed by P. J. **Parrott**, of the New York Station. In view of the excellent results that have been reported from the use of the sulphur washes in one or two States, it was thought that there was a possibility of introducing a more systematic method of spraying which should include the sulphur wash as a regular part of the orchard practice. At present there is only the Bordeaux spray so used, or rather the Bordeaux-arsenical sprays. These, however, do not repel the sucking insects such as scale and lice. Investigations show that the newer treatment has a good effect in controlling San José scale, Peach-leaf curl, and Peach-scab. By giving one application of the sulphur wash during the dormant season and supplementing with the two latter usual Bordeaux-arsenical sprays, the best results were had in the general control of all the troubles that affect the orchard.

Breeding Hardy Fruits.

"Methods in Breeding Hardy Fruits," were discussed by Professor N. E. **Hansen**, of the South Dakota Station. He explained that it was found necessary to secure a more favourable condition at blooming time, and the work was therefore done under glass after raising the trees, &c., in tubs for a year or two before blooming. They are wintered in a special cellar with windows to give some light. During late winter and early spring they are brought into the greenhouse and the crossing done there. Dwarfing stocks are necessary, such as Paradise for the Apple, Quince for the Pear, and Western-sand Cherry for the stone fruits. Much success has been had in hastening the fruiting season of cross-bred seedlings; and Strawberries from the cross of the wild with the tame have been brought to the fruiting size in the same year outdoors and fruited under glass in the winter. This saves much time in selecting varieties for propagation. Apple graft hybridisation has been carried on extensively, and the fruiting of hundreds of trees is awaited. Grafted on the Western-sand Cherry the Peach has been found to fruit as a very small tree. This stock would appear to promise advantages for use in private gardens and orchard houses and for dwarf plantations on dry, sandy soils. In growing a quarter of a million fruit seedlings, the many seedling variations appearing give evidence to support the mutation theory of De Vries. Plant breeding in its modern aspect, he says, is plant inventing, rather than the observing of an ever-changing panorama.

Election of officers resulted as follows: President, L. H. Bailey; secretary-treasurer, V. A. Clark; assistant secretary, U. P. Hedrick; W. R. Lazenby is made chairman of the executive committee. *L. Barron.*

(For "Gardeners' Debating Societies," see p. xiii.)

ENQUIRY.

Early and Late Peaches.—I should like to know the names of the best early variety and of best late variety of Peach for growing in a cold house to be trained upon a trellis 16 inches from the glass roof? By best, I mean with reference to quality of fruits, prolific bearers, and with vigorous constitutions, not liable to mildew. *L., Isle of Wight.*

TRADE NOTE.

Mr. W. Napper.—In consequence of the retirement from business of Mr. Wimsett, Mr. Napper is open to an engagement. Previous to coming to Chelsea Mr. Napper was connected with the once famous nursery of Lucombe Pince & Co., of Exeter.

ANSWERS TO CORRESPONDENTS.

Almanac: *T. Norman A.* You have omitted to supply us with your address.

"Cactus" Pelargoniums: *W. & J. B.* We think your flowers are very good examples of the type, which may be useful for certain forms of decoration, although in our opinion they are not so effective as the ordinary form of the zonal Pelargonium.

Carnations: *Montis. The American Carnation and How to Grow It*, by Chas. Willis Ward (New York: A. T. De la Mare Printing and Publishing Co.). You will find an exhaustive article on the subject of your other question in our issue for August 6, 1904, p. 88, where special soils and manures for Carnations are discussed.

Carnations Diseased: *A. & F. F.* They are affected with Puccinia dianthi. You will find an account of it in the books you mention.

Cypripedium and Paphiopedilum: *T. B.* There are differences between these two groups, and some think the differences to be so important as to necessitate the breaking up of the old genus Cypripedium into other groups of equal value. This is a matter of opinion, but among growers the prevailing tendency is to retain the old genus in its entirety, and we think for garden purposes this is the most convenient plan, as the proposed new genera can be treated as sub-genera or sections, and thus the necessity of adopting new names is avoided. The following is a key to the genera. In the first two the ovary is three-celled, with axile placentas; sepals valvate. Selenipedium has plicate leaves, persistent perianth, subglobose seeds. Phragmipedilum has conduplicate leaves, deciduous perianth, fusiform seeds. In the following two genera the ovary is one-celled, with parietal placentas and fusiform seeds. Cypripedium has plicate leaves, persistent perianth, and valvate sepals. Paphiopedilum has conduplicate leaves, deciduous perianth, and imbricate sepals.

Eucharis grandiflora (amazonica): *R. J. B.* We have repeatedly illustrated very fine specimens of this exceedingly useful flowering plant, but it is quite impossible for us to say where the largest specimen in the country may be found, especially as Eucharis are plants which are sometimes subjected to division at the time of repotting.

"Flora capensis": *G. P.* Lovell Reeve & Co., Henrietta Street, Covent Garden.

Gardeners' Notice to Leave: *Constant Reader.* The custom is to give or receive a month's notice. In order to claim this in a court of law, it would however be necessary to afford proof that you are a "menial" servant in the meaning of the Act relating to domestic servants.

Gas-Lime: *Ajax.* You do not state how much gas-lime was applied, or when. If a heavy dressing was given the land may have to be left idle for a year.

Gravel: *T. D. F.* You had better obtain offers from the Gravel Company, and from several contractors.

Grubs: *J. R. E.* They are the larvæ of one of the common weevil, and are as destructive in this form as in the beetle stage. You can do nothing better than trap them with pieces of Potato, Carrot, &c. A small flower-stake should be stuck in the Potatos, &c.; this will indicate the position of the trap, and be useful for withdrawing it.

Hyacinth and Tulip Bulbs: *G. A. M.* There appears to be nothing deficient in the quality of the bulbs, which are a very fair sample. It is likely that something has been introduced in the ashes from your gas-house which has poisoned the roots and killed them. Sulphur compounds would act injuriously in this way.

Names of Fruits: *R. W. R.* The Pear is over ripe. Send again earlier next season.—*S. P.* 1, Wyken Pippin; 2, Claygate Pearmain.—*L. E. W.* Wyken Pippin.—*A. B. S.* 1, Beauty of Kent; 2, Red Winter Queen; 3, Cellini Pippin; 4, Winter Red Sweet; 5, Sturmer Pippin; 6, Manx's Codlin.—*W. H., Devon.* Leon Leclerc de Laval.—*Sale.* Rather small fruits of Glout Morceau.

Names of Plants: *H., Dulwich.* Hippeastrum vittatum, generally called Amaryllis vittata; it grows well as an ordinary warm greenhouse plant, a dry rest being given the bulbs after the foliage dies off.—*E. L., Oxford.* Probably the Bracken (Pteris aquilina) come up from spores under glass. The specimens are small, drawn, and very imperfect barren fronds. Send fertile fronds when available.—*J. H. B., Falmouth.* Olearia Forsteri.—*Correspondent.* The Red Wood, Sequoia sempervivens.

Lily of the Valley: *J. V.* Please write in French or German, or even in Dutch.

Pines: *J. C.* The foliage is attacked with a fungus closely allied to if not the same as that which attacks the Scotch Fir, and called Peridermium pini. The same fungus also grows on the common Groundsel, but then assumes a totally different appearance. By inoculating the Pine with the fungus on the Groundsel the Peridermium is produced.

Right or Left-handed Digging: *W. D.* Some regard one way as left-handed and some the other, but we believe that the general opinion is that the man who has his right hand at the top of the spade is right-handed in his work, although he uses his left foot for forcing the spade into the ground.

Royal Horticultural Society's Examinations: *W. J. D.* Your letter has been forwarded to the Secretary of the Royal Horticultural Society, and we have no doubt he will reply to you.

Sops-in-Wine: *C. S. & Co.* In *A Dictionary of English Plant Names*, by Jas. Britten, F.L.S., Dianthus plumarius, the origin of the garden Pink, is stated to be known as Sops-in-Wine. Another author, R. C. A. Prior, attaches the name to D. caryophyllus.

Violets Diseased: *G. S. H.* Your plants are attacked by a fungus, "Ascochyta violæ." Spray the plants with potassium sulphide, 1 oz. to 3 gallons of water, every fortnight. Select another situation and fresh soil for a future plantation, getting a new stock from a distance.

Communications Received.—T. B.—J. V.—H. C.—G. M. W.—A. B.—W. P. W.—A. D.—Leonard Barron—S. N. W. & Co.—Hertfordshire Man—J. Langston—F. Harris—C. G. Girdham—C. K.—C. H. S.—J. Clayton, with thanks—Dr. R. W.—S. H.—C. D. McK.—A. P.—H. F.-Bevis—F. G. B.—W. N.——W. M.—C. J. E.—Duchesne et Cie —E. H J.—Mrs. A.—Gardener—M. E. B.—A. R.—B. Y.—Constant Reader Sir Michael Foster—J. G. W.—Imp. Dept. of Agriculture for the W. Indies—Syndicat des Fabricants de Sucre de France—G. E.—Soc. Nat. d'Hort. de France R. P.—Walpole Orchard Co.—J. W.—Dr. L.-J. R. G.—F. C. L.—F. M.—W. H. Y.—J. E.—E. M.—F. J.

(For Markets and Weather, see p. xiv.)

THE
Gardeners' Chronicle

No. 945.—*SATURDAY, Feb.* 4, 1905.

CONTENTS.

Apple Lane's Prince Albert 76
Apple Tower of Glamis 69
Apple-trees, soils and manures for 69
Benevolent Institution, Gardeners' Royal ... 78
Cedrus Deodara var. alba spica 76
Chrysanthemums for greenhouse decoration 76
Cobham Park, Surrey 74
Cordylines in Abbotsbury Castle Gardens . 66
Cultivation, experimental 68
Digging, right or left-handed 75
Douglas Fir, the ... 69
Eremurus, the species of 66
Ferns, tree 70
Fruit register 69
Gardeners' Association, the British 73
Gooseberries, soils and manures for 68
Grape, Prince of Wales 69
Kew notes 70
Kimberley, horticulture at 67
L'Entente horticole ... 72
Lily of the Valley, retarded 78
London Parks, changes in the 73
Manchester Botanical Gardens 73
Market gardeners' visit to Paris 76
Myrobalan Plum, the... 75
Obituary—
  Kitley, John 77
  Ransome, James Edw. 78
Oranges, hardy 74
Paris, international horticultural exhibition at 73
Peaches, early and late varieties of 76
Peas and Potatos, planting early ... 80
Plants, new or noteworthy—
  Cypripedium Gratrixianum 76
Rose-trees from Gordon's grave 73
Sarracenia Catesbæi ... 73
Societies—
  Aberdeen Chrysanthemum 78
  Croydon Horticultural 78
  Gardeners' Debating 79
  London Dahlia Union 78
  Manchester Orchid... 78
  National Chrysanth. 72,78
  Royal Horticultural . 74
  Scientific Committee of R.H.S. 78
  Woodbridge Hort. ... 78
Ventnor in January ... 73
Vines on walls 65
Week's work, the—
  Flower garden, the... 70
  Fruits under glass ... 71
  Hardy fruit garden... 70
  Kitchen garden, the . 71
  Orchid houses, the... 71
  Plants under glass ... 71

ILLUSTRATIONS.

Cordyline indivisa in the gardens at Abbotsbury Castle, Dorsetshire 66
Cypripedium Gratrixianum, a new species from Annam... 77
Douglas Fir, section of a large trunk of the 69
Gardener's cottage at Cobham Park, the 75
Grape-vine pergola one mile in length, a 67
View of the dwelling-house and lake at Cobham Park, Surrey (Supplementary Illustration)
Weeping Beech in the grounds at Cobham Park, Surrey 74
Zebras in the late Cecil Rhodes's garden at Kimberley 67

VINES ON WALLS.

AMONGST other old books on gardening I happen to possess two, both of which give considerable prominence to the culture of Vines on walls. Of course, the means for growing fruit of any kind under glass two hundred years ago would be possessed only by rich people, and if those of limited means were desirous of cultivating Grape-vines, it would become a question of utilising walls for the purpose or going without Grapes. Even now, as one rambles through the villages of Surrey and some other counties in the south of England, wherever a gable end of a house is exposed to the south a white Sweetwater Grape-vine has been planted, probably not in quite recent years, as many of them may be considered to have been planted half a century or more ago. In most cases they bear very poor Grapes, nor anything like a fair crop, not because the Vines are too old, but because sufficient attention is not given to them. The numerous main branches have been fixed to the walls years ago, and the laterals have been spurred back year after year, until they are now so weakly that few or no bunches form upon them. The County Council lecturers might instruct the villagers how gradually to cut out the old gnarled stems and replace them by young wood trained up from the base of the Vine, as only in this way can fruitful spurs be obtained.

Vines grown out-of-doors are liable to mildew; this troublesome pest invariably settles upon the bunches, and I do not know any better way to free the berries and leaves from it than syringing with soft soapy water in which some flowers-of-sulphur has been well mixed. The sulphur can be syringed off with clear water subsequently. "Shanking," which is the terror of gardeners who grow Vines under glass, is unknown upon out-of-doors Vines. With proper cultivation I get bunches of Grapes weighing 2 lb. on the south end of my house, but they seldom ripen well. The rods are trained in the same way as that in which gardeners train them in vineries.

A good treatise on fruit-culture was written by a clergyman, the Rev. John Lawrence, A.M., Rector of Yelverton, Northamptonshire, and published by Bernard Lintot, between the Temple Gates in Fleet Street, in 1716. The worthy clergyman was a good gardener, and had to work with limited means. He tried various methods to ripen his Grapes, such as training the Vines on the sloping roofs, and also by putting the bunches into flasks (glass flasks probably, but he does not say so). In the flasks they ripened sooner, "but they were apt to be mouldy for the want of free air, and had an insipid taste; and the slopes, though they admitted more of the sun's rays, yet they subjected the fruit more to the rains, dews, and cold nights." This Rector, evidently self-taught, had some failures, but he gives the sum of his successful culture of Vines and fruit-trees in this the fourth edition. He found that walls were best, and the climate was much the same as our own, although Old Sol, according to the astronomers, must have decreased twenty miles or so in diameter by combustion during the intervening years.

The varieties cultivated were the White Muscadine and the Black Cluster—these two were most to be depended upon, and the White Raisin Grape was admirable for tarts. Doubtless if the same care were exercised in cultivating Grape-vines now, and the right sorts were grown, the same measure of success would be attained. Our author writes—"Vine of all others needs pruning most, and though it is easiest performed yet it is least understood. Our climate is not so favourable, or the sun over bountiful of his ripening heats, but there is need of all the care and the greatest art to help nature forward in bringing Grapes to any degree of perfection in England;" but he adds, "With a little diligence and timely care there has seldom been a year but I have had good Grapes, and most years great plenty."

Mr. Lawrence deals with all manner of fruit-trees, and gives excellent advice as to planting, pruning, and subsequent summer and autumn treatment.

As some evidence of the interest taken in fruit-tree culture another book on the same subject was published in the following year, 1717, with the title of *Paradise Retrieved;* or a "Method of Managing and Improving Fruit-trees against Walls or in Hedges, contrary to Mr. Lawrence and others upon Gardening," by Samuel Collins, Esq. Printed for John Collins, Seedsman, over against the Maypole in the Strand.

Mr. Collins seems to have rushed into print principally to show the mistakes in practice and errors of judgment made by the aforesaid worthy Rector. I did not intend to follow the discussion, but rather to allude to the importance each author attached to Vines and Vine culture on walls. Mr. Collins advises two ways of growing them; the more practical of the two was to train the growths in single rods to the wall, although the distances apart, 14 inches, would be too close to each other. Once in eight or nine years each rod was to be cut down near to the ground, and young rods were to take their place, the cultivator of course being careful only to cut down intermediate shoots, so that the wall would always be furnished with fruiting canes while the young canes were in process of development. His second method was to train three canes from one root up to the top of a wall furnished with fan-trained Peaches and Nectarines. "These Vines fill the wall to the top at what height soever, and as the roots do not prejudice the stone fruit so neither does the dropping of the leaves damage the fruits, but in wet summers very much conduce to the keeping of it sound."

In the first decade of the nineteenth century (1803) an important treatise on fruit-trees was written by Mr. Wm. Forsyth, gardener to His Majesty at Kensington and St. James's, and it is rather curious that he should deal with the treatment of Vines on walls which had been planted between Peach and Nectarine trees trained exactly as recommended by Mr. Collins nearly a hundred years previously. The Vines had been sadly neglected at the time they passed into the care of Mr. Forsyth. The fruit produced was small, hard and unfit to be sent to the table." He cut them down and trained up two canes from each plant, allowing them to grow their full length. Two of these canes produced 120 fine bunches of Grapes, weighing from one pound to a pound and a quarter each. The following year (1791) he trained five Vines in the same way with considerable success, and in the third year, when all the Vines on the wall had been furnished with young wood (1793), he sent "for the use of His Majesty and the royal family, 378 baskets of Grapes, each weighing about 3 lb."

Mr. Forsyth does not state whether the garden was at Kensington Palace or St. James's, nor does he state the variety from which he obtained such good results. For the results were good, as he adds, "Every one who saw them said that the large bunches were as fine as forced Grapes." The varieties recommended by Mr. Forsyth for open walls were the July Grape, and specially Morillon Noire Hâtive, the white or common Muscadine or Chasselas, the white Frontignan or Muscat Blanc, the small black Cluster; the Auverna or true Burgundy Grape the best for making wine.

There are hundreds of gable ends of houses and walls furnished with Grape-vines, which bear none or worthless fruit owing to no care being bestowed upon them; the old branches have, as has been stated, had the laterals spurred back in some instances for half a century, until the Vine is utterly exhausted. I know plenty such walls that are of no value whatsoever, positions that would grow splendid Marie Louise Pears, if Grapes are not cared for.

One thing I may be allowed to state here, and that is that our youths, although they have more spare time than we used to have, do not give so much of it to their gardens. They are either playing cricket or attending cricket matches, or reading about them and discussing them in summer, or football in winter. To me it seems a sad waste of time, especially when ten times more pleasure could be obtained from cultivating even a small garden plot. At a recent annual dinner of the Royal Gardeners' Orphan Fund, Sir John Llewelyn said he would like to see every cottager in a position to grow good Potatos, and his wife able to cook them. It seems in these days that the wife will have to grow the Potatos as well as cook them. It is an old saying "that all work and no play makes Jack a dull boy"; but if it is all play and no work it will make Jack a useless man. *J. Douglas.*

CORDYLINES AT ABBOTSBURY.

The illustration (fig. 29) shows a row of plants of Cordyline indivisa growing in the gardens here, some of which were in flower at the time the photograph was obtained. The plants are about 16 feet high, and on the left of them are Bamboos, chiefly Arundinaria Simoni and Phyllostachys viridi-glaucescens, P. mitis and P. aurea. With the exception of P. aurea they are above the height of the Cordylines On the right-hand side of the picture is a feathery-like tree, also higher than the Cordylines, which is Eucalyptus coccifera, raised in Abbotsbury from own saved seed, the original plant being of great age. At the extreme end of the picture is a very large plant of Acacia dealbata, which will be covered with flowers in the spring. This Acacia is about 25 feet high. All the Cordylines at Abbotsbury flowered most profusely in 1904, and in November, when they were ripening their seeds, they appeared, as seen at a distance, to be again in full flower, owing to the effect of the little white fruits. Unfortunately they are very tender, and even those shown in the illustration were cut down by frost, and the present ones are the second or third that have been thrown up. We find the best protection is hay-bands wrapped around them from bottom to top, taking the bands off early in the spring. *H. Kempshall, Abbotsbury Castle Gardens, Dorsetshire.*

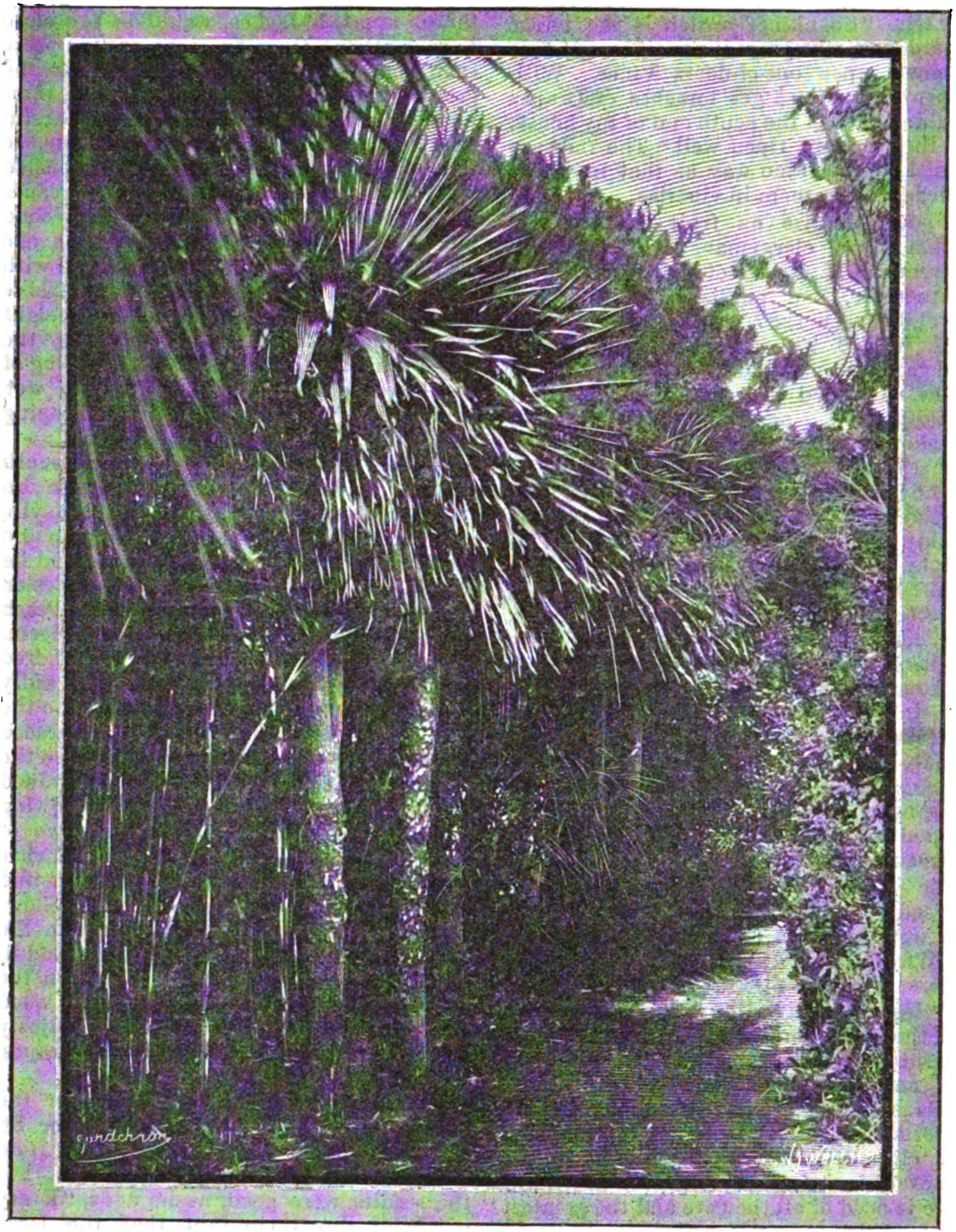


FIG. 29.—SPECIMENS OF CORDYLINE INDIVISA IN LORD ILCHESTER'S GARDEN AT ABBOTSBURY, DORSETSHIRE.

THE SPECIES OF EREMURUS.

The genus Eremurus consists of noble Liliaceous plants, closely allied to the Asphodels, inhabiting the drier regions of Asia Minor, &c. There are about thirty species known to botany, but only nine of these are in general cultivation, and but six of them are worth attention as effective garden plants. Their introduction to gardens is of comparatively recent date; E. spectabilis, one of the undesirables, and the plant upon which Bieberstein founded the genus, has been known for centuries. E. Bungei appears to have been next in order of arrival, but it was not until E. himalaicus and E. robustus reached us that the Eremuri gained the favour they now enjoy. Hybridists have taken them in hand, and quite a dozen hybrids known to me await increase of stock before being furnished with names, whilst six are already available for the best garden use in some quantity.

There has always been a difficulty in thoroughly acclimatising bulbous and tuberous plants from the East, the climatal conditions differing so markedly from our own, and Eremuri have shared with the rest of such plants a good deal of neglect on account of cultural difficulties. Happily, rapid propagation by means of seeds and less rapid root increase have rendered it quite unnecessary to import plants, and wide distribution of the home-raised article has rendered a coddling treatment equally unnecessary; one can grow Eremurus of some kind or other in every British garden, and grow them well.

CULTIVATION.

Eremuri are noble subjects for the flower garden, requiring only that a warm position and light soil be selected for them. E. Bungei, E. Warei, and E. Olgæ and their forms grow best in soils of limestone formation, and lime in some form or other is almost necessary for them. The site should be well drained and a quantity of builder's rubble introduced into the soil, and it is better to raise the bed or border above the general level, so that the crowns may rest in a dry state. The broad-leaved species of Eremurus delight in a free-feeding soil of deep tilth. It does not matter if it is light or heavy, provided it does not hold moisture in suspension 18 inches from the surface. Protection of the crowns just as the flower-spikes are showing is very necessary, for water collected during the night and passed down the leaf channels forms a pool in the morning, and this, freezing solid and thawing suddenly, injures the flower-spikes. A few Fir or Spruce branches laid over the crowns when frosts are expected in late spring will be all the protection needed. It is not necessary to protect the crowns in winter; they are capable of withstanding any frosts they are likely to endure without harm, and protection during winter will only encourage them to grow at unseasonable times. In cold or wet districts E. Bungei and its group would be safer lifted during winter. The loss of a few roots is not a matter of importance to this species and its allies, for I have found the root stocks when shorn of roots grow and flower just as well without them as with them. It is better to leave established clumps alone if in a light, dry soil. All the species must be planted in autumn save E. Bungei, which may be planted in December.

PROPAGATION.

Propagation, other than natural increase of root-stocks, which one cannot influence appreciably, can only be effected by seed raising, and the process is not easy with such species as Bungei, Olgæ, and their forms, which are extremely difficult to nurse through the seedling stages. Where the soil is naturally heavy, frames filled with sandy loam are useful as seed-beds.

Seeds that are freshly gathered and well ripened germinate freely enough if sown immediately in warm borders or frames. The first season's growth is but little more than an inch of pallid leaf, with a thickened base, and growth lasts from six to ten weeks, when the seedlings rest for a year. One can, however, extend the first season's growth by carefully watering the site and shading it from the strongest sunshine just before midsummer, thus preventing the seedlings from resting till they have added the maximum amount of material to the store root, a light being placed over them to keep them dry when they have grown all they will for that season. Next spring growth will appear early, and a light covering of litter is generally necessary to protect the young shoots as they pierce the soil. Again, just before midsummer water and carefully shade the site, so that the root-stocks be encouraged to develop fully. The third year's cultivation is merely a repetition of the first and second, and by this time they will have made the familiar thonged root-stock, when it be better to lift and replant them—the glaucous and narrow-leaved kinds in soil charged with lime-rubble, the broad-leaved kinds in ordinary light soil, rendered friable by adding leaf-soil in limited quantity. *G. B. Mallett.*

(To be continued.)

HORTICULTURE AT KIMBERLEY.

If the question be asked, "Do tree destruction and tree planting affect the climate, decrease or increase the rainfall, increase or lessen the long periodic droughts, increase or lessen the deadly hail-storms of the high veldt," the answer is "that they do so to an enormous extent," and no better evidence can be cited in confirmation of the effects on the climate of tree-destruction around Kimberley, even when those trees were nothing more than a forest of Mimosa scrub, growing as they do in a dwarf form on the wind-swept diamond-fields and lying over 4000 feet above sea-level.

But let us pass over the unfortunate tree destruction of the early days of the Kimberley mines (it was done partly in ignorance, but chiefly because the transport of fuel in those days by ox-waggon, some 700 or 800 miles from the coast, was slow and very expensive) and confine ourselves to the telling of what has been done during these past fifteen years in trying to make a desert literally to blossom as the rose in the way of tree-planting for shade, fruit, flowers, and vegetables, and to increase and make more regular the annual rainfall of the high veldt.

Favoured with a good soil and a supply of water pumped from the mines, Kenilworth, a suburb of Kimberley, the property of the De Beers Consolidated Mines, Ltd., was taken hold of by the late Mr. Cecil Rhodes, and he, with that wonderful gift he possessed of selecting the right men, got hold also of the right person in Mr. F. Fenner, F.R.H.S., as his Superintendent of Forestry for the immense tract of lands held by his Company. Mr. Fenner was at that time (about 1889) at Cape Town in a nursery. His previous experience in England had been extensive. Ten years had been spent at the Bagshot Nurseries; and for six years, before coming to South Africa, he had been the manager of one of the oldest and largest nurseries in Liverpool. But his knowledge of South African horticulture, with its range of climates, its different trees and plants, had been limited. His grip of difficult new work was what one would expect from such a man, and he overcame great difficulties by sheer force of intelligence combined with industry. It is commonly related of him that when he was sent by Mr. Rhodes to spy out the land he was to plant, he wept when he beheld the desolate wilderness which lay stretched out before him. I must state, however, that Mr. Fenner denies this fable. He felt, he said, downhearted; but he was determined that the work Mr. Rhodes desired him to do should be well done. A wholesome faith, that! Here, then, at Kenilworth, the ugly and apparently God-forsaken township of mine-tailing heaps and drainage *débris*, Mr. Fenner set to work to make of it—as now surely it is—Kenilworth the Beautiful; and after fifteen years of intelligent if hard labour, encouraged by liberal masters, a good soil and climate, what do we find?

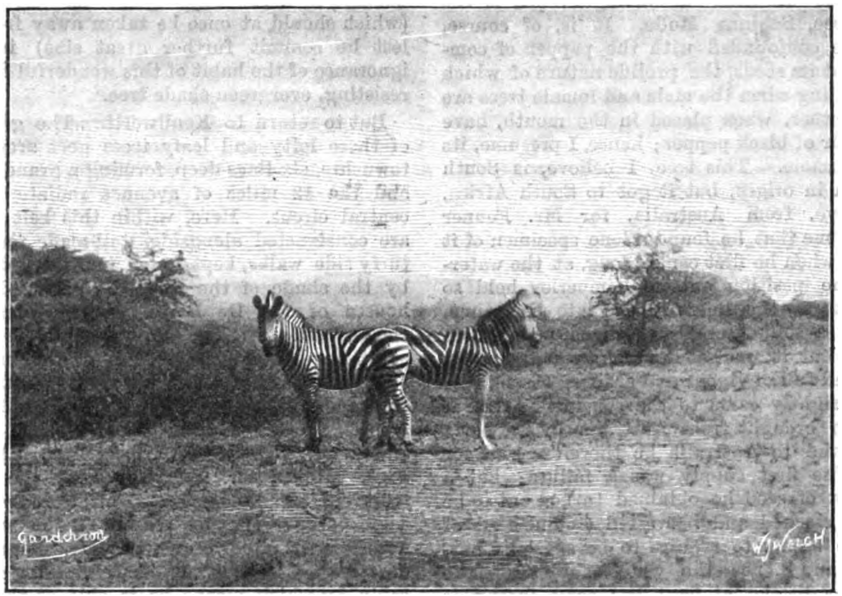


FIG. 30.—ZEBRAS IN THE ENCLOSURE FOR WILD ANIMALS IN THE GARDENS AT KIMBERLEY.

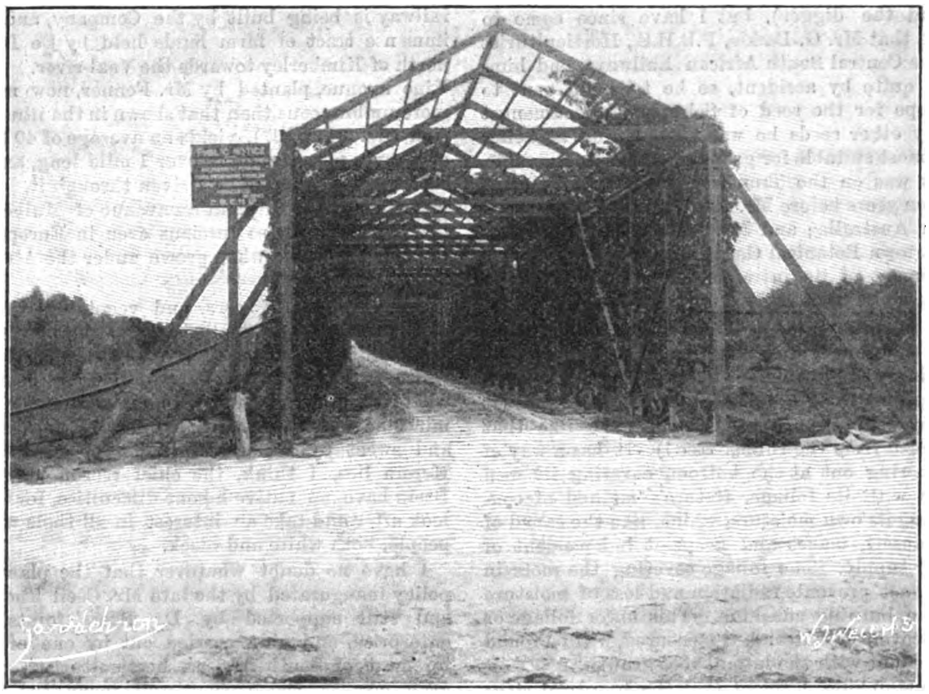


FIG. 31.—HORTICULTURE AT KIMBERLEY: GRAPE-VINE AVENUE, ONE MILE IN LENGTH. (SEE P. 68.)

Twelve miles of tree avenues, six lines deep, giving shade, tranquillity, a peaceful rest as you emerge from the glaring diamond floors and come upon this sylvan spot. These deeply-formed avenues are now, after twelve or fifteen years' growth, about 50 to 70 feet high, and consist of Casuarina (the Beefwood-tree), having a very graceful pendent foliage, and a tree well adapted for droughty climates; Grevillea robusta, also a graceful tree and a drought resister when established; Pinus insignis, P. Pinea, and Cupressus macrocarpa, and many species (I do not know how many) of Eucalyptus, but some of the species I cite—viz., E. citriodora, E. robusta,

E. resinifera, E. maculata, E. botryoides, and E. globulus.

But of all the trees at Kenilworth and Kimberley, the finest, the shadiest, and the best drought resister when well established, revelling as it then does in the long dry winter drought of six months' duration on the high veldt, is the Pepper-tree, Schinus Molle. It is, of course, not to be confounded with the pepper of commerce, but its seeds, the prolific nature of which is astounding when the male and female trees are near together, when placed in the mouth, have the flavour of black pepper; hence, I presume, its common name. This tree, I believe, is South American in origin, but it got to South Africa, we believe, from Australia, for Mr. Fenner informed me that he found a lone specimen of it growing, when he first came along, at the waterworks, the position outside Kimberley held so tenaciously by the Boers in the late siege time. This was a solitary male specimen, which bore no seed, but it was good to look upon and to sit under, and full of vigour and shade. Mr. Fenner at once rightly came to the conclusion that it had been brought from Australia by an early digger, and to Australia he therefore sent for seed. The first supply was a failure; but a second lot of seed he obtained turned out to be properly ripened and harvested (sound seed of this tree seems to require to be specially harvested), and hence the whole supply of the Kimberley district at least has come from this clever instinct of discovery, the possession of which is so necessary to success in the Colonies. How grand a tree it is let those who knew Kimberley twenty-five years ago and who know it now as a pleasant health resort, full of shade, brightness, and cleanliness, and of monuments, squares, avenues, and good roads made and planted during and since the ever-memorable siege of 1899—1900.

I had at first thought that Mr. Fenner was entitled to the honour of having introduced this marvellous tree into South Africa (barring our friend the digger), but I have since come to learn that Mr. G. Baikie, F.R.H.S., Horticulturist to the Central South African Railways, had himself, quite by accident, so he tells me, sent to Europe for the seed of Schinus Molle, amongst many other seeds he was then trying as being the most suitable for growing on the high veldt. This was on the Transvaal higher veldt, some fifteen years before Mr. Fenner procured the seed from Australia; and Mr. Tidmarsh, of the Grahamstown Botanical Gardens, verifies Mr. Baikie's statement of its introduction into Africa on a commercial basis some thirty years ago.

It is quite evident that Schinus Molle should not be pruned, or if necessary it must be cut as sparingly as possible, for it bleeds profusely when cut, giving forth a juicy, glutinous substance (it surely cannot be a useful substance like that expelled from the rubber-tree!) It has a way of feathering out at the bottom, covering its own roots with its foliage, Nature's method of conserving its own moisture, which, like the camel of the desert, makes and keeps it independent of water supply. The foliage covering the roots in very fact prevents radiation and loss of moisture in the burning sunshine. This lower foliage or root-covering material, if measured, will be found coincident with the lateral root-growth.

At Mafeking I found that the beautiful siege avenue of Pepper-trees, abutting on the town lands eastward of the town, where no shade or shelter previously was, and which had been planted as a memorial immediately after the siege had ended about four years ago, and now had developed a shady, healthy growth, a streak of evergreen in a dry and thirsty land, had quite recently been ruthlessly pruned; and I noticed all the trees bleeding, dying probably, weeping tears of shame at the ignorance shown of its unique habit, not evidently yet understood of the people who had with such good sense planted this tree. I am quite sure that all South African gardeners will agree with me that the man who had committed such folly deserved to have . . . . for he had done not less than £1,000 worth of damage in a few days with a half-crown knife (which should at once be taken away from him, lest he commit further great sins) in sheer ignorance of the habit of this wonderful drought-resisting, evergreen shade tree.

But to return to Kenilworth. The great belt of these lofty and leafy trees goes around the township, six lines deep, forming a grand shelter, and the 12 miles of avenues radiate from a central circus. Here, within this belt of trees are constructed alongside, well-made roads with turfy side walks, kept green in winter droughts by the shade of the trees, the pretty detached houses of the De Beers' *employés*, managers, clerks, and foremen, and near by, within a specially planted belt of trees for shelter, is the 50-acre orchard of fruit-trees now in grand bearing condition, consisting of all the best kinds of Apples, Pears, Plums (Japanese as well as European), Peaches, Nectarines, Apricots, Figs, Mulberries, Cherries, and the Citrus fruits of all kinds, which latter do well and yield large crops, by reason of the wise and necessary shelter provided. Mr. Fenner has devised an excellent cyanide fumigating movable cabin, by which means he is able at the proper season to thoroughly cleanse and keep healthy all his fruit-trees. He has also devised and erected a large, cool and commodious fruit-room, well shelved, thatched, and covered with straw.

Here, again, are the nurseries, which are the feeding grounds of the continual planting which is being done in and around Kimberley by the De Beers Company, which includes Beaconsfield township as well as Kenilworth, and a new suburb some miles distant towards the hill country and the Modder River, where an electric railway is being built by the Company, and the immense tract of farm lands held by De Beers north of Kimberley towards the Vaal river. The Vine avenue, planted by Mr. Fenner, now much more umbrageous than that shown in the illustration (fig. 31, p. 67), yields an average of 40 tons of Grapes per annum, is over 1 mile long, and a carriage and pair can be driven through it. Mr. Fenner is about to plant an avenue of Mulberry-trees: this fruit, so luscious even in Europe, is ten times more so when grown under the African sun.

All the fruit, flowers, and vegetables grown at Kenilworth are supplied free to the hospitals, sanatorium, the officials of the company, their white workmen, and to the native compounds, where thousands of the black labourers for the mines have most comfortable quarters, kept clean and sweet by a perfect system of sanitation. Herein lies, I think, the chief reason why De Beers have no native labour difficulties, for they look after and take an interest in all their work-people, both white and black.

I have no doubt whatever that the planting policy inaugurated by the late Mr. Cecil Rhodes, and still supported by De Beers' jointstock enterprise, and ably carried out by one of the foremost of South African horticulturists, does even now in the present well repay the proprietors, and future generations yet unborn will bless them.

I must not omit to mention the existence of a splendidly equipped meteorological observatory at Kenilworth, which lies not obscurely within this green oasis, doing good and most useful observational work for Kimberley and district. Belonging to De Beers, it is under the charge of one of their officials, Mr. Sutton, an able meteorologist and a Fellow of the Royal Meteorological Society. Here are to be found instruments of the newest patterns—photographic barometers and thermometers, anemometers and sunshine recorders. In meeting Mr. Sutton I found we had like tastes in practical meteorology. I mentioned to him a new method of sunshine recording I had but imperfectly tested by the "wiping-out" effects of the solar rays of a red ink line streak, which I think might have some advantages over the present photographic and burning sunshine recorders. Mr. Sutton was good enough to promise me that he would make further experiment of the plan, and I hope he will succeed. *Alfred Chandler, F.R.Met.Soc., F.R.Hort.Soc.*

EXPERIMENTAL CULTIVATION.

(*Continued from p. 21.*)

Manures for Special Crops—Gooseberries.—Well-devised courses of manurial experiments with Gooseberries are greatly needed, but they should be carried out on the same plan, at the same time, in as many different districts as possible. The crop is an important one, and worth both time and money to endeavour to secure some definite conclusions. At present the work which has been done in a systematic manner has given, in several cases, contradictory results. It is almost impossible to determine how far these differences are due to the variations of soil, to the effects of local or climatic conditions, to methods of cultivation, to the system of recording the crops produced, or to the manures used.

Green or Ripe Fruits.

There is a point, too, which must be remembered in this connection, namely, whether the crop is to be gathered green or ripe. In either case the grower requires large fruits and heavy crops; but with regard to the first, earliness is the great consideration, and, apart from varietal tendencies, any manure which assists this will be of distinct value. These objects have not been always separated, as they should have been in experimental work; and I would advise a course of treatment in which production of early large fruits, to be gathered green, should form the first series, to be followed by a second series in which the fruits are to ripen before the records are taken.

Stable-Manure v. Artificials—Potash.

The chief consideration is to test how far the value of stable-manure can be increased or decreased with profit by the addition of chemical manures; the form suggested for Strawberries would therefore be suitable—*i.e.*, 30, 20, and 10 tons of stable-manure with and without the chemical equivalents of a complete manure, and including a plot or plots not receiving the dung but only the artificial manure.

It has been stated on good authority that potash salts have a material effect upon Gooseberries, and further experiments are desirable to test how far this may be general. Upon heavy and good medium soils I have not observed any more marked effect with Gooseberries than with Strawberries, especially as regards the fruit gathered when green. A bulky manure which will exert some mechanical influence on the soil, and an ample supply of phosphates with nitrogen, are the chief requisites which my experience and trials have proved most profitable in Gooseberry culture. It is possible to supply these plants with all the essentials of their requirements in the form of chemical compounds, which it might be assumed must support them, and yet they will be seen to starve out of existence in a few years. Instances are well known where the efforts of chemical manures alone on heavy soils, as regards Gooseberries, have been evident to the most casual observer, and required neither weighing nor measuring records to prove the point conclusively as far as these special cases were concerned.

APPLES.

No fruit known to me has given such conflicting and puzzling results in experiments with manures than the Apple, and it therefore affords abundant scope for extended work of a carefully organised character.

The principal questions which require answering are the effects of manures in combination or singly upon, 1st, the growth of the tree; 2nd, early and continued fertility; 3rd, the size and development; 4th, the colour; 5th, the flavour; and 6th, the keeping properties of the fruit. To investigate all these matters thoroughly would be a great task and a lifelong work; haphazard or ill-devised attemps are worse than useless—they are absolutely misleading. It is far better to restrict efforts to one or two points and deal with these as exhaustively as possible; it is at least the surest way to secure some return for the labour. This one of the lessons we learn from experience; there is so much demanding attention, and the beginner who examines the matter is so eager to be first in the field with the commencement of his work, that in a few years he is overwhelmed, and a large proportion of otherwise good work is lost because it cannot be carried to completion.

Two great difficulties beset experiments with Apples; one is that, as with all grafted or budded trees, it is not easy to obtain a number on identically the same stock, and this renders the comparison of the work by different observers in some measure uncertain. The other is that a considerable period must elapse before reliable results can be secured. After the trees arrive into bearing, the variation of seasons will often affect the amount and quality of the crops to a far greater extent than any system of manuring can do. It is only therefore by having a long series of years to draw conclusions from that a trustworthy average can be ensured.

There are two periods however which come well within the range of the cultivator; one is the growth of the young tree from the time of budding or grafting until fruit-bearing commences, the other is when the trees are fully developed and either have had no special treatment or all have been treated alike, and probably show signs of diminished size of fruits or lessened fertility. In both these cases it is possible within a few years to produce some results by experimental manurial tests that may be of service, and upon which conclusions of general value may be founded.

The whole life of an Apple-tree would thus be divided into three parts: 1st, the period from the bud to fruit bearing; 2nd, from fruit bearing to maturity; and 3rd, from maturity to decline. Dealing with Apples on a dwarfing stock, the first may cover three to five years; the second is of uncertain and variable duration, perhaps from ten to twenty years, and presents the chief difficulties to the experimenter. The duration of the third depends upon many circumstances, amongst which the natural habit of the variety, and the health of the tree from its youth onwards, will have their respective effects.

For many reasons it is desirable to define clearly to which period observations are directed, and while it is eminently desirable to have continuous experiments, it would also be useful to have some confined to the first and third periods, for these come within the power of a far greater number of persons. Investigation might therefore deal with a study of the following:—

1. Effects of animal manures, with and without complete artificials, in different quantities.
2. Effects of phosphates.
3. Effects of potash.
4. Effects of nitrogen.
5. Effects of various substances, such as lime, iron, sulphur, magnesia, and others.

In the special series of experiments 2 to 5, a standard or normal experiment in 1 should be selected for comparison, together with a plot that is unmanured.

For declining trees a comparative trial should be made of manures in a solid state and in solution, as there is frequently a material difference both in the absolute effects and in the time requisite to display them.

Two important matters demand attention in experiments with young Apple trees, namely to have as many individual trees as possible subjected to one course of treatment, and the other is to select them with the utmost care in order that both in root and branch growth there will be a close approach to equality of vigour. The natural variations in strength and other qualities which cannot be detected are so great that averages drawn from a few individuals may be rendered most deceptive by one exceptionally good or one very bad tree.

As regards conclusions, too, a remark of Pfeffer is worth due consideration, viz., "The function of an essential element is by no means directly indicated by the results which its absence produces (see *Physiology of Plants*, vol. i., p. 424). *R. Lewis Castle.*

(*To be continued.*)

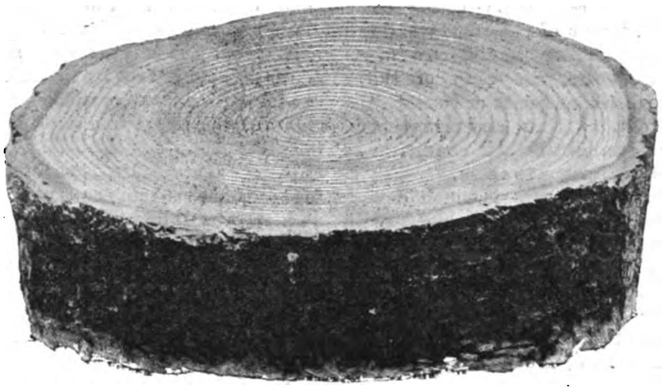


FIG. 32.—SECTION OF DOUGLAS FIR FROM STEM 50 FEET HIGH AND 18 INCHES IN DIAMETER. (*One-sixth natural size.*)

THE DOUGLAS FIR.

THE reader, on inspecting our illustration (fig. 32), must please remember that it shows a section of the trunk about 18 inches across, and being reproduced one-sixth only of the natural size, does not, on first inspection, give an adequate idea of the real size. The photograph was sent us by the courtesy of Mr. John Booth, and represents a section of a tree planted by him near Berlin on light loamy soil some thirty years since. The stem measured 1½ foot through, and was 50 feet in height. About two-thirds of the wood is reddish, like Larch, and resembles it in quality.

FRUIT REGISTER.

APPLE TOWER OF GLAMIS.

I AM sending samples of this excellent culinary Apple for your inspection, in support of my contention that it is one of the best varieties of cooking Apples extant. Our soil here is a very heavy loam resting on a clay subsoil, while the climate is unusually cold and damp, and by no means favourable for the production of Apples. In spite of these conditions the above variety does splendidly, the trees showing no sign of canker, and are quite a contrast to several other varieties here, which fall an easy prey to this disease. Another good point in its favour is that it is an excellent cropper, and even in 1903, one of the worst years for Apples on record, our trees of Tower of Glamis bore average crops of fruits. The tree is such a vigorous grower that its proper place is in the orchard, where it should be given plenty of head room, and allowed to grow unpruned, save in the centre, for the first year or two after planting. The branches will year after year become studded with fruit-buds, invariably followed by good crops of fruit, which, if properly harvested and stored, keep well into the new year. I have been using Tower of Glamis for culinary purposes during the past two months, and still have them in good condition. *W. H. Yates. Rotherfield Park Gardens, Alton, Hants.* [Certainly a most desirable variety for use late in the season; the specimens sent were of excellent quality. ED.]

ALPINE STRAWBERRIES.

The *Revue Horticole* has a coloured illustration of a Quatre Saisons Strawberry named Millet. The fruits are borne in raceme-like clusters. Each fruit is about 1½ inch long, ¾ inch wide in the middle, and tapering to either end; bright red with projecting "seeds"; flesh milky-white, sweet, perfumed, and of such consistence as to travel well.

PEAR VICE-PRESIDENT COPPIERS.

A chance seedling raised by M. Coppiers. The fruits are of moderate size, with delicate flesh of a slight almond flavour. The Pear is of medium size, regularly pear-shaped, with a moderately long stalk and a slightly depressed eye. The skin is dull brown, assuming an orange tint at maturity. Season September, October. *Bulletin d'Arboriculture,* January.

GRAPE PRINCE OF WALES.

This is pronounced in some catalogues to be a sport from the variety Mrs. Pince; but it seems doubtful, as the foliage is quite unlike that of the latter variety. It is, however, of first-class quality, and probably the best Grape of recent introduction. I planted two fruiting-canes, purchased from Messrs. James Veitch & Sons last March, and allowed each rod to carry a bunch of Grapes. At the time of writing the berries are of a jet black colour, solid, and of an excellent Muscat flavour. I am of opinion that as a late Muscat-flavoured Grape there is nothing to equal this variety. I wish I could allow the bunches to hang till March, but they are required for use now. It is a vigorous grower, and produces long, tapering bunches, with large, oval berries that develop a beautiful bloom. Those growers who desire a good late black Grape should not fail to plant this variety. I have tasted Diamond Jubilee at different places this season, and am not impressed with it. I cannot speak too highly of the qualities of the variety Prince of Wales, and those who plant a cane of it will, I am sure, not regret having done so. *C. J. Ellis, Warren House Gardens, Stanmore.*

TREE FERNS.

WITH few exceptions the cultivated species, being natives of New Zealand, require only a moderate temperature during autumn, winter and early spring, such as that afforded by an intermediate-house in this country, say 45° as the highest by night and 55° by day when sunny, or 5° less in dull weather. This regimen will suit Dicksonia antarctica, D. cicutaria, D. squarrosa and D. Youngi.

The Cyatheas dealbata and medullaris, as well as the Cybotiums princeps, Schiedii and spectabilis, are best grown, at least throughout the colder months, at which periods growth is or should be in abeyance in this country, in a house having a temperature by night of 50° to 55°, and 60° by day.

An important point is aërial moisture, for if this be not afforded constantly, in large amount in the season of growth, and lessened quantity at other seasons, fine fronds will not reward the cultivator, and thrips and scale will greatly increase, to the detriment of the plants and the loss of their beauty. These plants, from whatever country they come, are found only in moisture-laden localities, and near or beneath the shade of tall trees, so that any lengthened exposure to direct sunlight or arid conditions of the air is sure to be injurious to them.

In the summer, when there is much drying sun-heat, the stems should be damped with water through a fine rose syringe twice a day, or still more often, if, owing to the use of the conservatory by the inmates of the mansion, it is impossible to keep the paths constantly damp. In a state of nature the stems are kept moist by the dead fronds that hang around them; but no gardener having an eye to tidiness would permit such a state of things to exist in a trim conservatory; and as a substitute for the brown and withered fronds of previous years, the stems are sometimes covered with Selaginella denticulata, S. cæsia, and others, Ficus repens (stipulata), which afford the required hindrance to the undue evaporation of moisture.

In the spring, when renewal of growth takes place, there are often intervals of strong sunshine, and moisture may then be applied to the stems once a day, with a slight sprinkling of the crowns in the early morning and at closing time. Owing to the aërial or stem roots taking up large quantities of moisture, and the true roots keeping close at home, large pots or tubs are uncalled for, except in the case of aged specimens of great size, and such are best planted in a properly prepared station in a border, although such plants are less useful in decorative work, for being once planted they cannot be moved about. As a soil in which to grow any of the species, a sound turfy loam, one year in stack, mixed with one-eighth of sharp coarse sand, sandstone broken to the size of Horse Beans, together with a small quantity of leaf-mould, and one-fourth of the whole to consist of hard peat, should be used. Let this be prepared, if possible, a month previous to using it. Pot firmly, using a blunt rammer, not forgetting to afford ample space for the application of water.

If manure be applied in the root-waterings, it should be of the mildest description, these plants being extremely "clean-living," decaying tree-leaves and spent Mushroom-bed material, at the rate of 1 bushel of either in 40 gallons of water, being the strongest that it is desirable to use, and then only in the season of growth. The drainage should be sufficient but not excessive; and, as root-disturbance causes a check to the plants, the material placed immediately over the crocks should be of an enduring nature.

When Tree-Ferns reach this country they usually present the appearance of crownless and rootless boles. For convenience sake these may be put into pots or tubs just large enough to accommodate the bulbous end, stood in an intermediate-house, and syringed twice a day, no attempt at forcing them to vegetate being made. The bulbous end may be bound round with sphagnum or ordinary moss. When roots appear generally at the root end and along the stems, potting in a proper fashion may be forthwith carried out.

If a sheltered spot can be found in the pleasure-grounds or flower-garden, preferably on the north side of tall trees, the Dicksonias, if portable, may be risked outside during July, August, and the early half of September, guying them securely to stout stakes driven deeply into the soil, a full-sized slate or tile being placed under each pot. Keep the soil around them moist, and attend to their requirements as if under glass. *F. M.*

KEW NOTES.

EPIDENDRUM ENDRESII, *Rchb.*—Although named and described in the *Gardeners' Chronicle* by Reichenbach so far back as April 7, 1883, this lovely species is still very scarce. This is no doubt accounted for by the fact that it is difficult to import in good condition, and it is also very slow to increase under cultivation. A very healthy little specimen is now in flower in the Cattleya-house. Its time of flowering is therefore almost the same as that of the original plant, which was found by Endres in Costa Rica in flower in December. The plant has three flowering stems, the tallest of which is about 8 inches, and having an aggregate of twenty-eight flowers; the sepals and petals are white, the large lip being blotched with violet. At Kew this delicate species is grown well at the cool end of a Cattleya pit, in a compost of fibrous peat and sphagnum-moss in equal parts. (See *Gardeners' Chronicle*, April 18, 1885, p. 504.

PLATYCLINIS LATIFOLIA, *Hemsley*.

A specimen with twenty spikes is now flowering in the warm Orchid-house. It is a robust-growing species with tapering pseudo-bulbs about 1½ inch long, and broad somewhat leathery leaves about a foot in length. The flower-spikes are borne on slender peduncles, gracefully arched, and 2 or 3 inches longer than the leaves; the flowers are creamy-white, rather large, and arranged in two distinct rows on the rachis; at the base of each flower is a reddish bract about half the length of the sepals. P. latifolia is very fragrant, as also are several other species. P. cucumerina and P. glumacea are also flowering.

HIPPEASTRUMS.

The most attractive feature of the greenhouse (No. 4) at the present time are two handsome groups of Hippeastrum crosses, arranged with Ferns. They are among a very early batch of a large stock of bulbs, from which a series of displays will be produced for some considerable time. These bright and beautiful groups have now become quite an annual feature at Kew, special attention having been given to the careful selection and judicious crossing of this popular class of plant during the past ten years, resulting in the production of a very high-class strain. The plants have large, well-formed, bold-looking flowers, with broad and almost uniform segments. The colours are very rich and varied, the deep red forms being perhaps the most pleasing, of which Sir William is typical. The lighter forms are also well represented, though they are not so extensively grown at Kew as the darker ones. *W. H., January 26.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN,
Aston Rowant House, Oxon.

Fruit-trees.—The pruning and training of pyramid and bush trees should be undertaken with great care. Young pyramid trees require to have their branches trained as nearly equi-distant as possible. Trees that are making suitable growth should have their leading branches shortened to within 12 to 18 inches. The main central shoot of a pyramid tree should be perfectly straight. In bush trees all the continuation branches may be shortened as in the pyramid, allowing sufficient growth to remain on each to preserve a well-balanced tree, but the side growths on the leading branches should be shortened to three buds. Older trees that are in a fruit-bearing condition require similar treatment to those described above, but in a modified form, and any cross branches and misplaced shoots must be removed entirely. Trees that are growing too freely and that are unfruitful should be noted that they may be subjected to root-pruning in the autumn. The spurs may be treated in the same way as advised in a former Calendar. Much discretion is necessary when manuring fruit-trees. They should not all be given it indiscriminately, for by so doing a vigorous-growing tree that is manured will become still more vigorous and unfruitful.

Training.—After pruning is completed the shape of pyramid trees may be considerably enhanced by training the branches at a suitable distance apart, and in the case of those varieties, such as Annie Elizabeth Apple and Le Lectier Pear, whose growth develops perpendicularly, this is essential in order to admit a free circulation of air and light. The lower branches should be pulled down to the required position by strong tar-twine and fastened to neat pegs driven securely into the ground or tied to an iron or wooden hoop encircling the tree. Each consecutive branch may be tied to the branch below until the whole tree has been trained. In the case of young trees these ties may be removed after one season, but should remain longer in older trees, which take more time to "set" their branches. The heads of young standard trees may be treated as advised for pruning pyramids. Trees planted late last spring and left unpruned may now be cut back to a growth-bud, always selecting one growing in an outward direction. The side-growths should be shortened to a growth-bud.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Lobelias.—Plants of Lobelia fulgens that were lifted in the autumn and wintered in a heated frame will now be in suitable condition for dividing into small clumps for potting. The pieces should be potted into 4-inch pots, using a compost of leaf-mould, manure from an old Mushroom-bed, and loam. Encourage the plants to develop suitable growth by placing them in a pit with a temperature of about 60°. When they are well established they should be shifted into cold frames to become hardy. The variety Queen Victoria has crimson foliage; this, with Firefly, Ibis, and Lord Ardilaun, are all excellent varieties. Lobelia cardinalis and L. syphilitica are North American species, and can be treated in a similar manner. L. Millleri is a fine rich-purple hybrid.

Dwarf Evergreens.—The following shrubs are all suitable for growing under trees and in shady places:—Andromeda (Leucothoe) axillaris and A. Catesbæi; these are excellent subjects for planting on banks or borders, never becoming too large, and always attracting attention with their slender arching stems. They are peat-loving plants, but will also thrive in sandy or gravelly soil. In open situations they often develop bronze-coloured foliage. The plants are propagated from seed, from layers, and by division, and are somewhat slow in growth until well established. Gaultheria Shallon is seen at its best when spreading over steep banks or on rough, rocky places. Skimmia japonica will grow in shady situations, but will never develop its beautiful berries under such conditions. Hypericums are splendid subjects for planting under the shade of trees, where they form a "carpet" of growth. Ivies, Periwinkles, Berberis, and Veronica Traversii are also suitable for this purpose. Where space is unlimited Rhododendrons are unsurpassable for this kind of planting. while Aucuba, Holly, Yew, and Box may all be used.

Berry-bearing Shrubs. — Some of the more suitable for planting are Pernettya mucronata (which is always effective), Cotoneaster horizontalis, C. microphylla, C. Simonsii (one of the best species), C. frigida, Cratægus Pyracantha var. Lelandi, Hippophae rhamnoides, and Leycesteria formosa.

Hollyhocks are indispensable for hardy borders, and in places where the fungus is a scourge, it is best to treat them as annuals. Sow the seed now, and when the seedlings are up encourage them to make strong plants by May. Too much fire-heat will be prejudicial to robust growth.

Carnations, Verbenas, and *Centaurea candidissima* may also be sown now.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Main Crop Peas.—Our general practice with regard to sowing this crop is to do so on the first opportunity that presents itself in the new year. The ground selected for the purpose is that in which Celery has been grown, and with this object in view the trenches for the Celery are made 6 feet apart. When the Celery is dug the soil is allowed to remain in the form of trenches, with the result that a much larger surface is exposed to the influence of the weather. Previous to sowing the Peas the ground is first levelled, and then shallow trenches are made about the width of a spade and at a depth of from 2 to 3 inches on the site occupied by the Celery trenches, which allows ample space for taller-growing varieties, to which we give the preference. The variety which is largely grown here for the main crop is Criterion; this grows to a height of 6 feet. According to my experience this variety has had many rivals but no superiors during the past twenty-four years of my practice. For later crops the variety Autocrat is unsurpassed, being of robust growth and of a free-fruiting character, yielding Peas well through November or until cut down by frost. The Gladstone, also a late-cropping variety, is probably unsurpassed for the size of its pods. The varieties Alderman, Gradus, and Prizewinner are also amongst the most desirable varieties to grow.

Brussels-Sprouts. — For early crops seeds of this highly-esteemed vegetable should now be sown as advised for Cabbages, and the general treatment required is the same. A soil too loose in texture and over-rich has a tendency to produce plants whose sprouts are but sparingly produced and of a large, loose character. The sprouts should be round, compact, of medium size, and closely developed upon the stem. For the main crop sow seeds on a warm border early in March. The drills should be sufficiently far apart to allow the hoe being used freely between them. Suitable varieties to grow are Sutton's Exhibition and Dwarf Gem.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn. East Sheen, S.W.

Cypripedium insigne and Varieties. — These plants may soon be put in order for the season, renewing first the surface compost of those that do not need to be repotted. In repotting the plants do not disturb the roots very much, and if the roots are difficult to turn out of the pots, insert an old table-knife, and work it round next the inside of the pot to loosen them. Then place the plant in a fresh pot, and fill in around with more drainage material, and a compost consisting of two parts peat and one part each of sphagnum-moss and good yellow loam-fibre, adding a little sand or small crocks. This grand cool-growing Orchid needs a genial atmosphere, and a temperature ranging between 53° and 60° at this season, and a sufficient supply of water to just keep the rooting medium moist. With the above species may be grown such as C. Arthurianum, C. Niobe, C. nitens, C. villosum, C. Boxallii, C. purpuratum, &c., which in most respects may be treated as advised for C. insigne.

Cypripedium Spicerianum.—This species resents disturbance at the roots, and so long as the plant thrives with an annual renewal of the surface potting materials, it should not be disturbed. If it is found desirable to repot the plant, carefully divide it into convenient pieces, without causing more than necessary damage to the brittle roots. Place the plant in the new pot, and insert pieces of crocks amongst the roots, filling the pot in this manner to within 3 inches of the rim. Place moss over the crocks, and fill the pot almost to the rim with a compost consisting of two parts peat, and one each of fibrous loam and moss, adding a sprinkling of sand as the work proceeds. Make the whole firm, but not hard, and have the centre of the plant somewhat above the level of the receptacle. Give the plant a gentle watering immediately afterwards, using a rosed can for the purpose, and allow the roots to approach dryness before watering again. Afford shade in moderation, sufficient moisture in the atmosphere of the house and at the roots, and keep the house at a temperature of from 55° to 65°. Avoid growing the plants in a close atmosphere, at the same time avoid draughty ventilation. During the summer months deluge them with rainwater overhead. C. Spicerianum has probably been used for hybridising purposes more than any other species, and generally with good results, notably in the case of C. × Leeanum, one of the finest winter-flowering Cypripediums. This hybrid should be treated in the same way, and disturbance and division of the plants will be attended with little danger if carefully carried out. Other hybrids should be treated in a manner similar to that appropriate to the species whose characters are most predominant in the hybrid. For instance, C. × Buchanianum, in which C. Druryi occurs, should be grown in the warmest house, and be carefully watered during the winter months. In all hybrids bear in mind the peculiarities of the parent species, and treat the plants accordingly.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

THE season is approaching when the potting and topdressing of plants must be given attention. It will greatly facilitate matters if suitable material for this work is now prepared. If the loam can be cut from a well-built stack of soil little trouble will be found necessary in order to bring it to a suitable condition for use, but if the soil is in a wet and cold condition, considerable time must elapse before it can be properly prepared. When the soil is in this unworkable condition it is advisable to spread the turves thinly in a place where they can be protected from the weather and allowed to gradually ameliorate, in preference to the usual practice of placing them in baskets or in similar receptacles in the stoke-hole or on very hot water-pipes. Flower-pots of various sizes should be examined and cleansed, particularly the inside of the pots, before being stored ready for use. These matters, small in themselves, are of vital importance to success, apart from the pleasure that is gained from seeing the work proceed smoothly and without hindrance.

Richardia [Calla] Elliottiana.—Little difficulty is now experienced in flowering this beautiful golden-coloured Arum, thoroughly ripening and afterwards resting the plants for a suitable period being the principal requirements for success. For producing an early batch of these flowers some of the strongest rhizomes should be potted and placed in a warm-house. A suitable compost for these plants should consist of two-thirds loam, on of peat, and a liberal addition of silver-sand. The rhizomes should be potted deeply. When potting the plants use sufficient of the compost to cover the drainage, and then place a layer of silver-sand; plant the rhizomes on the sand, and then fill the pots to within an inch of the rims with the soil, which should be sufficiently moist to enable the grower to dispense with watering until root-action has started satisfactorily.

Chrysanthemum Plants that were propagated from cuttings taken in November should be removed to a shelf or staging near to the glass, and allowed to remain there for some days previous to being potted. Care must be taken to avoid draughts, which will otherwise check the plants. Where two or more cuttings are growing in a pot, these should be separated without loss of time, and potted singly in thumb-pots, as no advantage will be gained by giving them a larger shift at this season. Cuttings rooted singly in a pot may require a slight shift, but unless the pots are well filled with roots this operation is better deferred for a few days. The plants should be stood in a closed frame with a little fire-heat, and placed near to the glass. They should be syringed frequently, and under these conditions will make roots readily. A suitable covering of mats will be better than excessive artificial heating for protecting the plants from frost at night-time. Stock plants that are retained for supplying further cuttings should be examined, and those that show no signs of developing growth should be plunged to the rims of the pots without delay in a brisk bottom-heat of leaves, while the plants should be syringed occasionally to induce growth.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Permanent Vines.—Severe weather, with cold easterly winds, following mild weather, has made it necessary to bestow extra care and attention in the ventilation of early vineries; some air should, however. be admitted early in the day when the weather is favourable, in order to encourage strong, healthy growth, and to carry off excessive moisture. From the time the bunches are visible advantage should be taken to close the houses early on bright days, and thus encourage the Vines to grow freely; at the same time the temperature may be allowed to fall to 58° in the morning. Remove from free-setting varieties, such as Black Hamburgh, Foster's Seedling, and Madresfield Court, all weak shoots and any small bunches that are not required. This should be done before the Vines are in flower. It is not advisable to tie the shoots down too soon at this early period of growth, except those whose points press against the glass, and these should be brought down by degrees. Stop the shoots two or three leaves beyond the bunches according to the amount of space available, giving sufficient room for the principal leaves to have full exposure to light and air. The night temperature should be gradually increased to 65° by the time the Vines arrive at the flowering stage, increasing the day temperature correspondingly, but always allowing a fall of 5° in very cold weather. Pollinate the open flowers at mid-day, and at the same time keep the atmosphere of the house somewhat drier. Another watering may be given at this stage to those Vines which are confined in well-drained inside borders; this will generally be sufficient until the Grapes are set.

Early Muscats.—These require a temperature of about 5° higher than other varieties, especially at the period when the Vines are in flower. Remove all bunches except the most compact ones on each shoot, which will allow more than enough for a full crop. Keep the points of the bunches when in flower well to the light, and if possible pollinate them with Black Hamburgh pollen. All Muscat houses should now be closed, as Muscat Grapes require a longer season in order to finish than most other varieties.

Mid-season Houses which contain several varieties of Grapes should now be started, in order to supply ripe fruit during July and August. See that the inside border is sufficiently watered, and if necessary use tepid water for the purpose. Syringe the Vines two or three times daily, according to the conditions of the weather, always allowing the canes to become dry before night-time. A night temperature of 50°, rising to 65° with sun-heat, will be found suitable.

Young Vines.—Should home-grown Vines be required for planting in May, "eyes" should now be put in. Select buds from wood that is firm and well ripened. Remove some of the wood below the buds, and insert them in small pots filled with loam and sharp sand, and then plunge the pots in a bottom-heat of 75° to 80°.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY,	Feb. 4	Société Française d'Horticulture de Londres Meet.
WEDNESDAY,	Feb. 7	British Gardeners' Association, Meeting at Croydon.
FRIDAY,	Feb. 10	Royal Gardeners' Orphan Fund, Annual Meeting and Election of Candidates.

SALES FOR THE WEEK.

MONDAY AND FRIDAY NEXT—
Hardy Border Plants and Perennials, Roses, Azaleas, Greenhouse Plants, Fruit Trees, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
Azaleas, Rhododendrons, Palms, Border Plants, Roses, Fruit Trees, &c.; 1,464 cases of Japanese Liliums, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Lilies from Japan, also Palms, Roses, Shrubs, &c., at Stevens' Rooms, at 12.30.

FRIDAY NEXT—
2,000 Odontoglossum crispum, consignment of Cattleya Warneri, &c., and an importation of Cattleya Trianæ, by Protheroe & Morris, at 67 & 68, Cheapside, E.C.

(*For further particulars see our Advertisement columns.*)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —39·3°.

Actual Temperatures:—
London.—*Wednesday, February* 1 (6 P.M.): Max. 54°; Min. 39°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 2 (10 A.M.): Bar., 30·1; Temp., 44°. Weather—bright, with sunshine.
Provinces.—*Wednesday, Feb.* 1 (6 P.M.): Max. 48°, London; Min. 43°, N. of Ireland.

L'entente horticole. We have inserted the following communication because, although some exception may be made to it on points of detail, and whilst exaggerated importance is, as we think, given to the proceedings of certain special Societies, yet the principle laid down is one to which general assent may be given. The Royal Horticultural Society to our own knowledge has been represented in former years, either directly or indirectly, at Amsterdam (twice), Brussels (repeatedly), Florence, St. Petersburg, Paris (frequently), Düsseldorff, and Haarlem, and in this very year a deputation from the Society will visit Paris, so that our correspondent's statements require some modification.

The interesting report in the *Gardeners' Chronicle* (see p. 47) of the annual dinner of the French Horticultural Society of London, held at the Café Royal on January 14, conveys to those who were not present only a faint idea of the remarkable degree of support that the officers and members of the National Chrysanthemum Society accorded to their French colleagues.

Both the Chairman, M. Philippe de Vilmorin, who came specially from Paris to preside at the dinner, and Mr. George Schneider, the President of the French Horticultural Society, must have been deeply impressed with the sympathy and manifest goodwill displayed by the members of the English special society, which was so largely represented. And this feeling is largely the outcome of a thoroughly international policy that has been pursued by the National Chrysanthemum Society for at least fifteen years or more. As a result it is probably better known on the Continent, but particularly in France, than any other special society in this country, and has many friends and sympathisers where it could not otherwise have expected to have them.

Having been the first and probably the only English horticultural society of any kind to lay the foundation stone that forms to-day the basis of the "Entente cordiale," as it exists in its present form amongst the gardening fraternity of the two nations—a work in which the heartiest co-operation of the French Horticultural Society has been unstintingly accorded—we may well enquire how it is that other societies are content to remain in a condition of insular and almost indifferent isolation. The main reason would appear to be that there are in England very few of our horticultural societies that have active working members with either a sufficient knowledge of the French people, the French language, or French horticulture generally.

In the case of the National Chrysanthemum Society it has long been different. The very flower to which its energies have been constantly devoted for more than half a century is essentially a French one. Many of the most important points in its history are closely associated with French workers, and many of the great improvements in the popular autumn flower have been and are still due to French cultivators. The National Chrysanthemum Society recognises these facts, and never fails to acknowledge them by participating as often as is possible and convenient in the great Chrysanthemum shows and conferences that are held abroad, and has sent deputations to the Continent for this purpose more frequently than all the other English horticultural societies put together have done for other purposes, whatever they may have been.

As a result, when great international gatherings are held, the National Chrysanthemum Society is not forgotten, and it is worthy of mention that it is the only English society that has ever exhibited the produce of its members abroad. On each occasion the result was most gratifying, and the jury made the highest award in its power to the exhibit. But this phase of the question is of minor importance; there is still the more important one of almost total abstention from anything like official recognition by leading English horticultural societies of great international horticultural gatherings abroad—possibly the sole exception being the Ghent Quinquennials [?]. Last May, when the Royal Horticultural Society of Piedmont held its jubilee show in Turin, almost every important horticultural society in Europe was represented by the personal attendance of some of its officials. During the festivities, which were under Royal patronage, we had frequent occasion to lament the absolute indifference (to use the mildest term we can) of English horticulturists in contributing to the success of that great gathering.

In 1900, when the Paris International Exhibition was open to the world at large, it was remarkable that no English exhibitor took part in any of the periodical flower shows that were held between May and October excepting the Chrysanthemum men. It is equally remarkable that not one horticultural or floricultural society in the United Kingdom paid anything like an official visit to the exhibition, except our own National Chrysanthemum Society—a fact that cannot have escaped the notice of our French *confrères*. For some years past there has been in existence a Société Française des Rosièristes, which holds a yearly show and conference, in much the same way as the French Society of Chrysanthemum Growers does; yet we never heard that there has been anything like a friendly and official visit to one of these shows by the English Rose-growers, who are surely indebted in some measure to French growers for having played their part in the development of the Queen of flowers. In fact it is more than probable that many members of the National Rose Society are even unaware of the existence of a French sister society, and that it will hold on May 23 next in Paris an International Show and Conference, to which Rose-growers of all nations will undoubtedly be warmly welcomed.

I feel tempted to ask the question in these days of the "Entente cordiale," when so much depends upon mutual esteem and regard between every section of the two great nations who are neighbours, "Will this opportunity be allowed to slip by without English and French Rose-growers following the example already set them by the devotees of the not less popular flower?"

The National Horticultural Society of France is organising, as it does once in every ten years, an International Horticultural Congress and Show, which will be held from May 20 to 28 next. There is no doubt that individual visitors from this country will be present, for happily there has always been recognised by individual horticulturists of both nations a feeling of common interest and regard for each other on account of the love that each has for his calling. Amateur and professional alike, no matter in what branch of the gardening art they are interested, can always meet on the neutral ground of horticulture on the best of terms, and without regard to the rival claims of politics or nationality. These meetings can and do frequently take place informally; but what we should in this year of grace 1905 more rejoice in than anything else beside is to see some of our leading horticultural societies in the United Kingdom do their part towards further cementing the "Entente cordiale," as has already been done by several other organisations on both sides of the Channel. In a few years' time England and France will have been at peace for a hundred years; as the time draws near surely each and every one of us might well do our best to hasten, if possible, the time when the sword and the spear shall be turned into ploughshare and reaping-hook. Others, such as medical men, scientific men, parliamentarians, and commercial men, have in an organised way begun, and why should not representative horticultural societies follow? The opportunity is close at hand, let us hope that it will not be neglected, so that our friends on the other side may see that a large and important section of the community like the gardening fraternity of this country, as represented by some of its leading societies, regards the "Entente cordiale" not an expression of mere empty compliments, but as founded on an honest desire to promote the best interests of our two countries and a cordial determination to do everything to further the friendly intercourse between all those who are actively engaged either for profit or pleasure in the great and peaceful art of horticulture. *C. Harman Payne.*

National Chrysanthemum Society.—The Annual General Meeting of the members of the above Society will take place at Carr's Restaurant, 265, Strand, W.C., on Monday next, February 6, at 7 P.M., Charles E. Shea, Esq. President, in the chair. In addition to the usual business transacted at this meeting the members will be asked by the Committee to consider some proposed alterations to the rules.

—— The following notice is being issued to raisers, importers, and distributors of new varieties of Chrysanthemums:—"The Executive Committee has decided that after January 1, 1905, a department of plant registration shall be instituted by the Society. Raisers, importers, and distributors of new varieties (whether members of the Society or not) are requested to send to the Registrar appointed by the Society, on or before December 1 in every year, a list of all new varieties they intend to send out in the ensuing year; such list to contain the name and description of variety, the name of raiser and of the distributor, and the section to which the new variety belongs, forms for which purpose will be provided upon application to the Registrar. Growers are requested where possible to submit any such new varieties previously to the Floral Committee for classification. The information thus obtained will then be inserted in the *Annual Report and Schedules of Prizes* every year, and thus the Society's Official Catalogue will practically be kept up to date. The Registrar at present is Mr. C. Harman Payne, 141, Wellmeadow Road, Catford, S.E."

Société Nationale d'Horticulture de France.—This Society will hold, from May 20 to 28 next, a great international exhibition of horticultural products and of cognate industries. Foreign visitors are invited to take part in the proceedings, and a deputation from our Royal Horticultural Society will attend. The schedule and the programme of the Horticultural Congress, which will be held at the same time, will be sent on application to the Secretary of the Society, Rue de Grenelle, 84, Paris.

Minister and Gardener. — The death is announced of the Rev. David Lewis, in his sixty-eighth year. In addition to being pastor of Elim Baptist Church, Mr. Lewis was head gardener to the late Lady Llanover at Abercarn Uchar which position he retained to the end.

The British Gardeners' Association.—Meetings for the purpose of organising branches of the British Gardeners' Association will be held in the following towns: Croydon, February 7; Waltham Cross, February 7; Norwich, February 8; Leeds, February 11; Birmingham, February 13. Also in Manchester, Liverpool, Bath, Crawley, Newport (Mon.), Exeter, Wylam-on-Tyne, and Altrincham. It is hoped that gardeners residing near any of these towns will make further enquiries concerning, and will make an effort to be present at, the meetings. Up to the present meetings have been held in the following towns: Oxford, Haslemere, Bournemouth, Caterham, Redhill, Sunderland, Ipswich, Swansea, Cardiff, Loughborough, Newport, Isle of Wight, and Newcastle. Secretaries of Gardeners' Societies are invited to communicate with the Secretary of the Association, with a view of making arrangements for meetings in their respective districts.

—— Gardeners who wish to become members of the Association, but who are in doubt as to any point, are invited to communicate with one or other of the following gardeners, if in or near their district, they being either secretaries of branches of the Association, or taking an active part in its promotion:—A. C. Bartlett, Pencarrow Gardens, near Bodmin; W. G. Begbie, Stanford Hall Gardens, Loughborough; D. Bliss, Superintendent of Parks, Swansea; A. J. G. Chalice, The Nurseries, Plympton; E. G. Creek, Westerfield House Gardens, Ipswich; J. Coutts, Killerton Gardens, Exeter; W. H. Divers, Belvoir Castle Gardens, near Grantham; A. Gaut, 61, Belle Vue Road, Leeds; C. G. Girdham, Avendale, Cecil Road, Hale, Altrincham; W. Hall, Mowbray Park, Sunderland; S. Heaton, 30, Hill View Road, Oxford; J. D. Jones, 8, Acacia Road, Bournville, Birmingham; C. H. Snook, West Hill Gardens, Shanklin, I.W.; J. W. Mallinson, Longwathby R.S.O., Cumberland; J. Milburn, Victoria Park, Bath; H. A. Pettigrew, St. Fagans Gardens, Cardiff; C. S. Ritchie, Benellen Towers Gardens, Bournemouth; W. Seaman, Margery Hall Gardens, Reigate; J. Udale, 2, Ombersley Road, Droitwich.

Ventnor in January.—The extreme mildness of the winter climate at Ventnor, Isle of Wight, was conspicuously noticeable on Sunday last, January 29. We had left London on the previous day, where everything out of doors was in the grip of hard frost, and skating was so common along the route of the L. & S.W. Railway that lakes two to three acres in extent were available and safe as far south as Guildford. On Sunday morning, during a walk along the sea front at Ventnor, however, the following plants were observed in flower on the undercliff, and in open-air gardens on the Esplanade—Veronica Traversii and other species; yellow and coloured Primroses, Snowdrops, Viburnum Tinus (in flower everywhere), Escallonia macrantha, Marigolds, Chrysanthemum frutescens, (Marguerites), 4 feet high and 5 feet across, specimens in front of Waveney Villa having scores of excellent flowers upon them; Aubrietia, Arabis alpina, Helleborus species, Vinca major, Pansies, Jasminum nudiflorum, several varieties of Roses, Ivy-leaved Pelargoniums, some of which being trained against the fronts of houses were nearly 10 feet high, and freely flowered; zonal-leaved Pelargoniums in the open and under verandahs, as at the Clarendon Boarding Establishment on the hill near to the railway station, where they are from 6 to 8 feet high; Iris stylosa, of which a plant on the "Cascade" facing the sea bore nearly a dozen perfectly fresh flowers of pale-blue colour; Mesembryanthemums in several varieties—these grow abundantly, and flower all through the year in many an island garden. Coronilla glauca, so commonly cultivated in pots in less favoured districts, was trained 6 to 8 feet high on the front of the Esplanade Boarding House, and presented a display of yellow flowers from every shoot. These plants could all be seen from the Esplanade, but on further search many more remarkable specimens were found to be in flower in a garden at St. Lawrence, and spring Cabbages were ready for cutting in a garden at Bonchurch, to both of which we hope to refer in a subsequent issue. Before leaving the sunny Esplanade (where ladies were making good use of their sunshades) the official meteorological instruments were inspected, and they read thus:—*Barometer*: 39·9° (abnormally high); *Thermometer*: 52° (in shade). At the same time the thermometer in Pier Street, which is not so much exposed to the sea-front, read 45° What a delightful winter resort Ventnor offers to Londoners, whose good spirits may have suffered from the effects of fog and the disappointments incidental to suburban gardening!

Changes in the London Parks.—The recent death of Mr. Kempsall, who was for many years Superintendent of Clissold Park, has involved several changes in the management of the London parks. The chief of these is the raising to a higher grade of the Victoria Embankment Gardens, of which Mr. F. W. Wright, who kept the gardens so well three or four years back, has been requested to again take charge. Mr. J. H. Bates goes from the Embankment to Clissold Park, Mr. G. Dodson from Kennington Park to Springfield Park, Mr. T. Weatherstone from Battersea Park to Kennington Park, and Mr. F. Philp becomes Superintendent at Myatt's Fields. On January 31 Mr. Weatherstone was the recipient of a handsome testimonial in the form of a timepiece, subscribed for by his colleagues at Battersea Park. Mr. Rogers, the Superintendent, made the presentation.

Gardeners' Royal Benevolent Institution.—Mrs. E. Allward and Mrs. Anna M. Smith desire to thank the subscribers to this Institution who elected them as pensioners on the Fund at the recent election.

In Memory of Gordon.—About a year ago, says the *Sussex Daily News*, Mr. Albert Hillman, of Ersham, near Hailsham, was fortunate enough to secure, through the Egyptian Government, a cutting from the Rose tree growing on General Gordon's grave at Khartoum. This cutting has produced five young trees, one of which has been graciously accepted by Queen Alexandra. It occurred to him that it would help to keep green the memory of the great Christian soldier if one of the young trees were planted in Hailsham churchyard; and as the 26th ult. was the twentieth anniversary of General Gordon's death Mr. Hillman, with the consent of the Rev. F. Clyde Harvey, Vicar of Hailsham, planted the tree in a prominent position about 9 yards south-west of the Lady Chapel.

Horticultural Club.—The annual meeting will be held at the Hotel Windsor, Victoria Street, on February 14, at 5 p.m., and the annual dinner will be held at 6 p.m. at the same place.

Manchester Botanical Gardens. — The Council in their Annual Report report a heavy loss as the result of the year' working. The accounts show that the total income was £1.734 8s. 10d., while the expenditure was £3,443 3s. 6d.; the deficit on the year's working was thus £1,708 14s. 8d., bringing the total deficit to £11,431 7s. 6d. The Council are aware that the serious annual losses incurred in connection with the Society's work cannot continue, and that something must be done immediately to save the Society. The Trustees and Council, working in conjunction, have agreed that in order to maintain the Gardens for the public they should be offered on very reasonable terms to the City of Manchester, the amount fixed upon being £20,000. If the negotiations with the City of Manchester are carried through, the Council of the Society will devote itself to horticultural work from an educational standpoint. Flower-shows will be held in the Gardens as formerly. Lectures on horticultural subjects will be given periodically, and when possible in conjunction with the shows. These lectures and reports of shows will be printed and issued in the form of an annual journal of the Society's proceedings, with illustrations of new and rare plants, &c., and sent to all members of the Society.

Retarded Lily of the Valley. — On Jan. 27 we were shown some extraordinarily good specimens of Lily of the Valley obtained from retarded crowns in the nursery of Messrs. Thos. Rochford & Sons, Broxbourne. They were 18 inches high, of unusual strength, and most of the spikes had thirteen, fourteen, and even fifteen "bells" upon each. Retarded crowns are most useful for forcing before Christmas, and these flowers at the end of January are therefore worthy of remark.

Sarracenia Catesbæi.—In a recent part of the Contributions from the botanical laboratory of the University of Pennsylvania is an article by Dr. Macfarlane on this species, which has been confounded with S. flava. Plants were grown in the Edinburgh Botanical Garden under the name of S. flava picta, the pitchers of which in their microscopic structure resembled those of S. rubra. No light was thrown on these plants till Dr. Macfarlane received fresh specimens from Mobile, Alabama, and eventually was enabled to visit the plants in their native home. Specimens were collected and cultivated in the university garden at Philadelphia. The flowers produced were of a pale lemon colour and in some cases almost white. They were at once seen to be identical with those of the so-called S. flava picta of British botanic gardens. A full description is given, from which we learn, among other things, that whilst in S. flava the leaves appear in April and wither in October, in S. rubra they last till the end of November or early December; in S. Drummondi they persist till February or March of the succeeding year, and in S. Catesbæi they remain green till the end of April. Those of S. variolaris. psittacina and purpurea last still longer. Dr. Macfarlane speaks of S. Catesbæi as the most successful fly-catcher of all the species, and it is the earliest species to flower, he having collected flowering specimens in Alabama as early as February. S. flava comes next in order, then S. variolaris, S. psittacina and S. purpurea, whilst S. rubra and S. Drummondi flower a month later than S. Catesbæi. [See a monograph, with numerous illustrations, of the garden forms of this genus, including a note on S. Catesbæi, in the *Gardeners' Chronicle*, June 25 and July 2, 1881. Ed.]

Royal Horticultural Society.—As this sheet is passing through the press we have received a copy of the Annual Report of the Council. We are precluded therefore from doing more than call attention to some of its contents. As our readers know the year has been a specially memorable one, and the opening of the new Hall and of the garden at Wisley constitute, in the slang of the day, a "record." Some nine thousand pounds are urgently required to pay off the building debt, and the trustees of the Lindley Library, we may add parenthetically, are still "passing rich on £40 a year." Thanks to the munificence of Baron Schröder, however, the library is in course of installation in the new building, in a manner that it never was before. At Wisley, a range of glasshouses has been erected, together with residences for the officials. A research laboratory is promised in the future. We greatly regret to hear of the discontinuance of the Holland House Show, but the Council, we are told, is seeking some other locality wherein to hold its summer show. The usual financial statements are published. We must defer further comment till another issue.

Rose Show at the Crystal Palace.—The Crystal Palace Rose Show has been definitely fixed for Saturday, July 8. Schedules can be obtained from Mr. G. Caselton, Superintendant Gardener, Crystal Palace, S.E.

Hardy Oranges.—In his annual report Secretary Wilson, of the Department of Agriculture (United States), states, regarding the production of new Citrus fruits: "The efforts that have been made by the Bureau of Plant Industry for a number of years in the matter of producing by budding new Citrus fruits, so as to build up varied industries in the South, have met with very gratifying results. The hardy Oranges, which have been secured as a result of the crossing of the sweet Orange with the hardy Japanese Oranges, are now ready to distribute, and the work of distribution will be inaugurated in the coming winter. There has been fruited this year for the first time a sweet Orange of the hardy type. This is an accomplishment which the Department hoped for when it first inaugurated the work. The other new Citrus fruit developed from the Bureau's investigations, such as the new Tangelo, which is a cross between the Tangerine and the Pomelo, a new velvet-skin Orange, and several other creations, will all prove exceedingly valuable in sections where the climatic conditions will permit the growing of these more tender sorts."

COBHAM PARK.

(*See figs. 33, 34, and Supplementary Illustration.*)

If the visitor to Cobham, in Surrey, proceeds from the village along the road leading to Effingham, he will pass by the pretty old church, cross the bridge which spans the river, and in about five minutes come upon the estate of C. Combe, Esq. The estate, and even the gardens, will be found on either side of the road—on the left hand the dwelling-house, pleasure gardens, shrubbery, lake, &c.; and on the right hand the kitchen and fruit gardens, including the glasshouses. The view of the house shown in the Supplementary Illustration is one taken from the north front, at some distance away, and having the lake for the foreground. The house is a stone building, and was erected in the year 1872; it stands on a somewhat steep incline, the ground falling from the south to the north.

The lake is 3½ acres in extent, and, together with running streams, gives to the estate the appearance of being abundantly watered. The river affords facilities for boating, and the lake for fishing. On January 28, at the time of our visit, the lake being frozen over, a good area for skating was afforded.

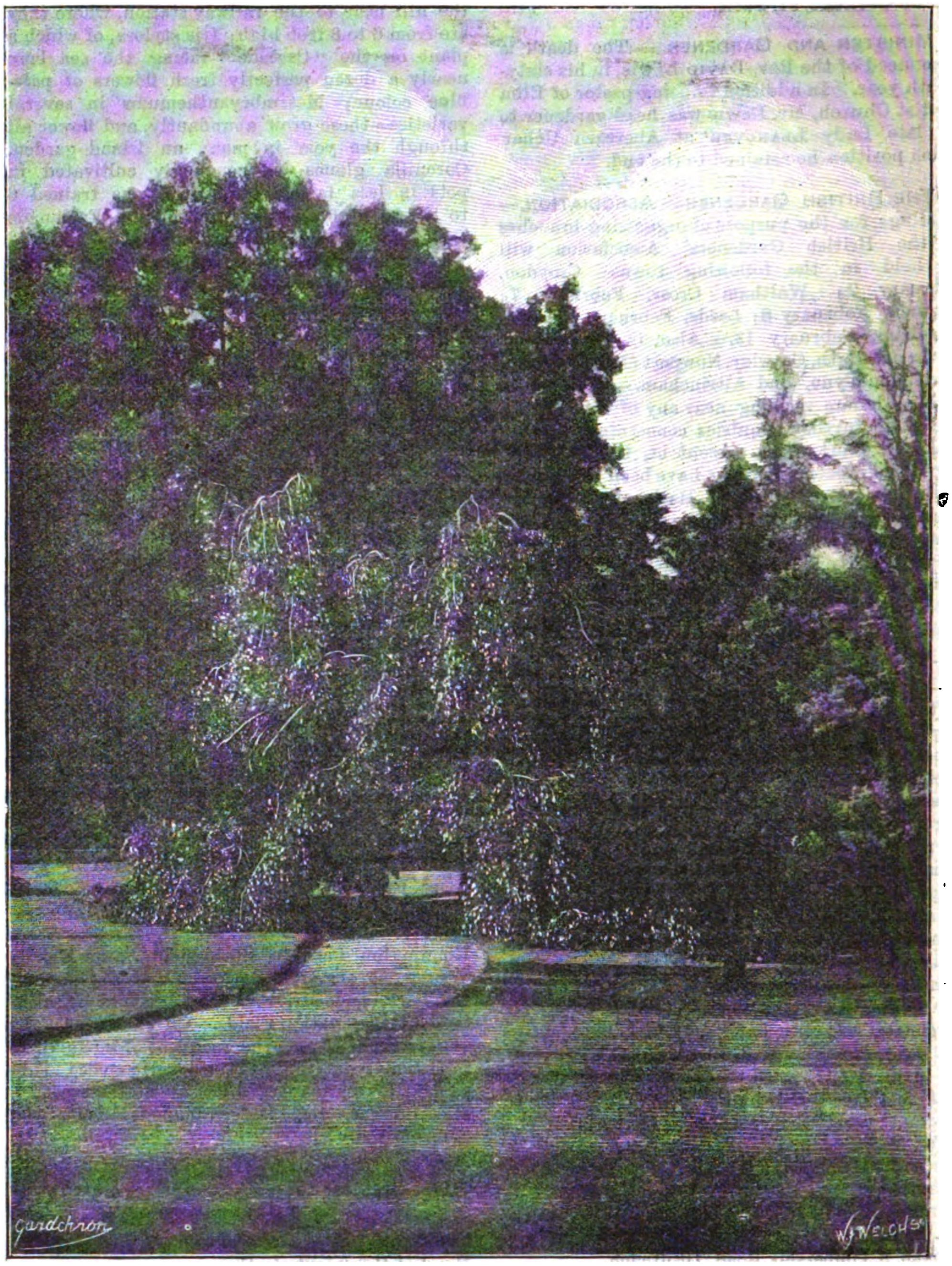
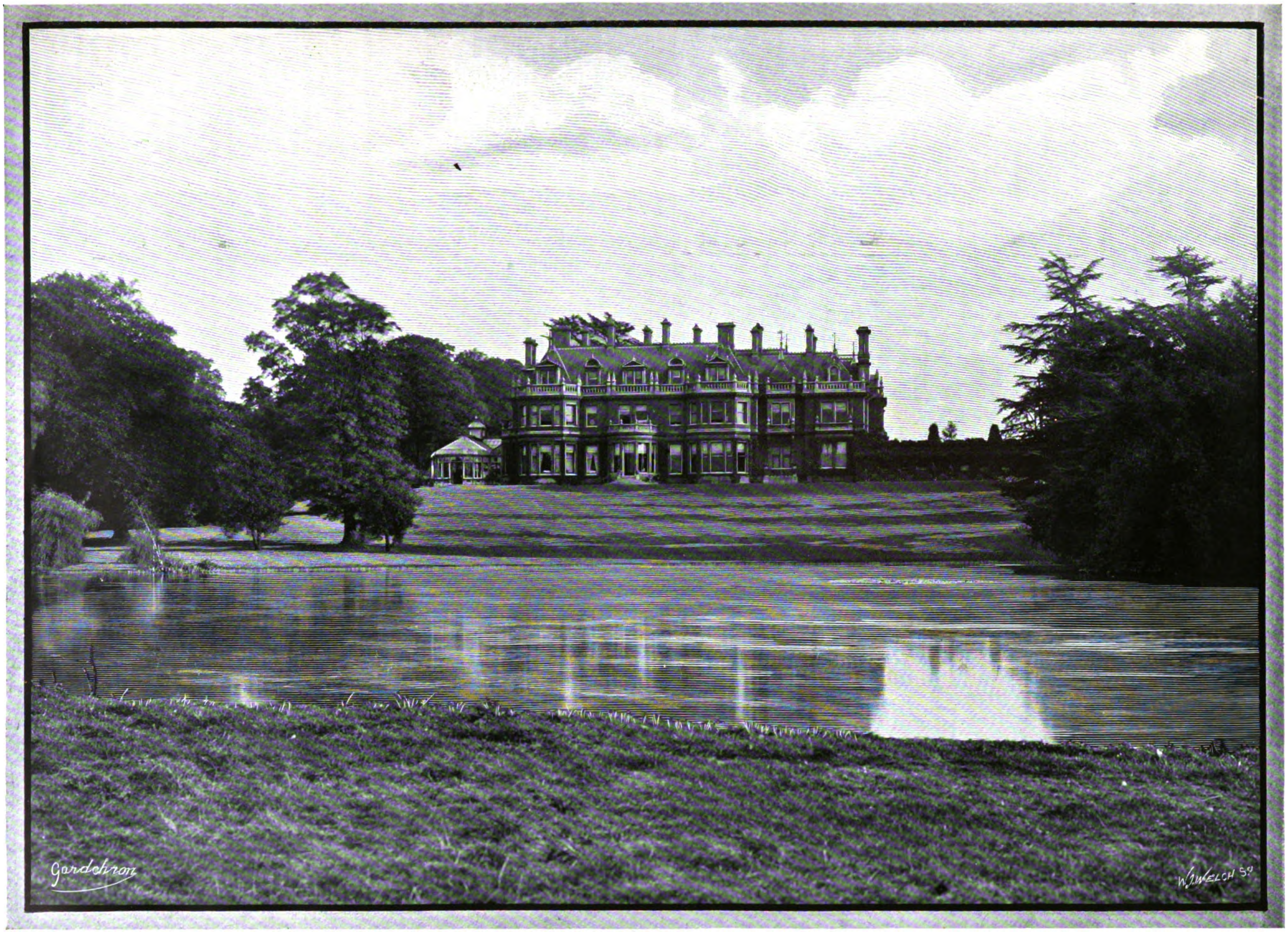


Fig. 33.—Weeping Beech in the grounds at Cobham Park, Surrey.

There are plenty of timber trees in the grounds, and numerous Conifers have been planted during the past thirty years to impart a furnished appearance to the view in winter. The most prominent subjects, however, are several old Cedars that were probably as high twenty years ago as they are to-day. One of these, on the south front of the house, towers well up above the building, and may be seen in the illustration. It is a noble fellow, albeit the leading shoot was lost years ago, and the form of the tree thereby decreased in symmetry. Of the younger Conifers one of the most attractive is a specimen of Cedrus atlantica glauca rather more than 20 feet high, of perfect shape, and making rapid growth each season. On the north-east side of the house one of the paths passes under the Weeping Beech shown in fig. 33. This tree spreads over a considerable area, provides dense shade from sunshine, and is a popular feature of the grounds. A more remarkable tree is a decrepid specimen of the common Lime about 60 feet high. The trunk is quite hollow for several feet upwards from the base, and at a point 4 feet or so high decay has eaten across the sides towards the back of the trunk, almost as a saw might have cut it. Though the sides still exist therefore, the principal support for the tree is at the back, and when in leaf, under the influence of wind the trunk from above the point where decay has destroyed the sides may be seen to sway a little from side to side, but is yet firmly held erect by the good tissues still remaining at the back of the trunk.

There are several borders of herbaceous perennial plants around the shrubberies, and stretches of beautiful green lawn between the trees afford charming walks from the dwelling-house. Paths also extend into the wood or shrubbery over an area of nearly 10 acres, and in



View of the Dwelling House and portion of Lake at Cobham Park, Surrey, the Residence of C. Combe, Esq.

summer are very appreciable. On the south front the pleasure-ground has been extended recently, and the effect from this aspect might be further improved in the same direction and by the provision of a flower-garden with informal beds.

Kitchen and Fruit-garden.

On the other side of the road is the kitchen-garden, of about four acres extent, surrounded by walls which are put to excellent use in the cultivation of fruit-trees. Pears, Apricots, Peaches, Nectarines, Plums, &c., trained against these walls crop freely, and in seasons like that of 1904 need to be thinned severely.

Figs ripen well on the outside walls, but are not nearly so successful as they are at a residence at Bonchurch, Isle of Wight, belonging to Mr. Combe's son, where a magnificent wall-tree of the variety Negro Largo is the best in the neighbourhood, although standard Fig-trees in the open are common there. The kitchen garden plots at Cobham are for the most part surrounded by espalier fruit-trees, and though some of these are aged, such specimens are being gradually removed and young trees of the best varieties planted in their stead. There is an orchard on rather higher ground than that of the garden, so that altogether the garden and orchard supply ample crops of hardy fruits. Kitchen-garden produce, being of great importance, is given close study, and such crops of Onions, Asparagus, various Brassicas, &c., as were obtained last season were the result of an intelligent use of manures, in which animal and chemical manures were employed. Early forcing of vegetables is carried out here as thoroughly as in most places, for at Christmas there were supplies of new Potatos, French Beans, Seakale, Asparagus, Rhubarb, Mushrooms, &c. The Asparagus is forced in frames from plants raised in the same garden from seeds. Seakale is forced in the permanent beds. Peas (Sutton's Harbinger) are now 2 inches high in frames, and are already through the soil in the open garden, as also are Broad Beans. Spring Cabbages appear very promising, and Cauliflower plants under hand-lights are in a forward condition for transplanting when the season is a little further advanced.

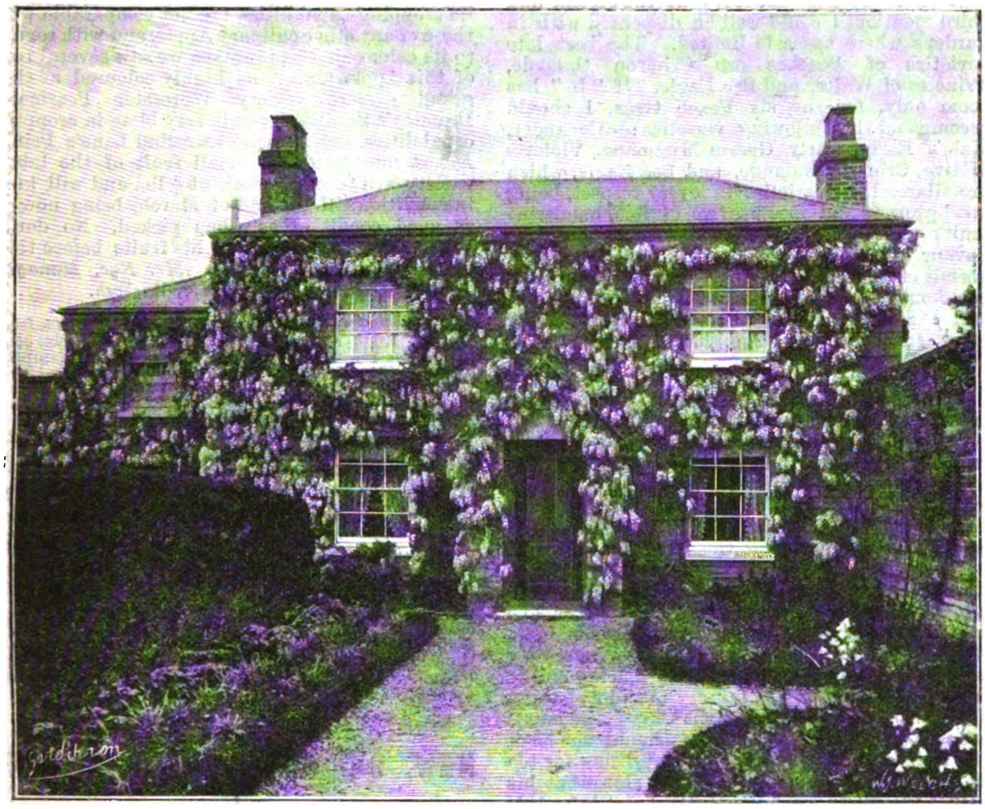


Fig. 34.—Gardener's cottage covered with Wistaria at Cobham Park.

There are numerous Peach-trees under glass, two houses with hip-shaped roofs having a length of nearly 200 feet. One house of 120 feet length is provided with means of heating, and the other is not. All the best varieties of Peaches and Nectarines are cultivated in these houses, and the trees are excellent specimens of good training; the crops observed upon them from time to time have been abundant. Notwithstanding this, very heavy crops of Tomatos are obtained from the same houses from plants put into the borders and trained as horizontal cordons. The earliest Peaches are in another lean-to house, which, being in two divisions, affords space for Fig-trees also. These Peach trees are now setting their flowers. There are four vineries, and the vines show the same skilful treatment that is applied to other departments of the gardens. At the present time there is a moderate supply of well-preserved Grapes in bottles, and the earliest canes are breaking nicely into growth. Melons and Cucumbers are cultivated in sunk pits having span-shaped roofs; young Melon-plants are now making growth, and large supplies of Melons, Cucumbers, and Tomatos are produced each season.

There are several plant-houses, the principal one being a structure of considerable size, having a span-roof. It is divided into two divisions, one of which contains a first-class collection of Codiæums (Crotons), Cordylines (Dracænas), and like foliage plants, whilst the other is furnished with Palms and other species that require a less degree of heat. Codiæums are grown with better success than is obtained in many gardens; the plants retain their foliage well, and develop extra good colour. They are propagated by "ringing," not by cuttings.

At the present time there are good displays of Cyclamens, Primulas, and other winter flowers Herbaceous Calceolarias, Souvenir de la Malmaison Carnations, Chrysanthemums, Poinsettias, Pelargoniums, Coleus thyrsoideus, Gloxinias, Begonias, &c., are grown in numbers proportionate with the means at hand.

The concluding paragraph in this note may well be one respecting the gardener's cottage, depicted in fig. 34. The photograph was obtained last spring, when the magnificent Wistaria sinensis was irresistible with its prodigal display of flowers and liberal perfume. What a delightful cottage the picture pourtrays! Its occupier is Mr. William Honess, who has been gardener at Cobham for the past four and a half years, having succeeded his father in the position. Mr. Honess's experience in good gardens at Keele, Hatfield, Welbeck, &c., is now of the greatest service to him. In August last his friends had the pleasure of congratulating him upon his selection of a fair young lady from the locality to share with him "Wistaria Cottage."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

RIGHT OR LEFT-HANDED DIGGING.—I have always looked upon the man as a right-handed digger who held the top of the spade with the left hand whilst the right hand moved along the helve of the spade, and the right foot drove the spade into the ground; the leverage is obtained by the left hand at the top of the spade, but the spadeful is lifted and turned over by a sympathetic motion between both hands. The reverse of these positions of both hands and feet are, in my way of looking at it, left-handed diggers. But the spade makes no complaint so long as it is cleverly and masterly handled either way. *"An Old Digger."*

MYROBALAN PLUM.—"E. M.," on p. 45, says he "cannot agree with Mr. Ward that this Plum is superior to Quickthorn for hedging purposes, and that his experience leads him to say that it is not nearly so good for hedges as a well-managed Quick;" adding, "though to see a well-cultivated hedge of the latter is indeed a rarity." Be this as it may, I have in my mind's eye miles of Quick hedges, some alongside the King's highway from Portarlington to Mount Mellick, at a point where it passes through the "Wilmott-Chetwoode" estate. These hedges are 4 feet through, 5 feet in height, and are rounded at the top, and as the result of close annual trimming from the first year of planting are a veritable network of short, close growth from the base to the summit. Other examples of Quick hedges of a different type may be seen in the Inverleith Row Nurseries, Edinburgh. These are (or were some years ago) from 18 inches to 2 feet through at the base, narrowing upwards on both sides to a point some 6 feet from the ground. These hedges were planted as wind-screens in various parts of the nurseries as protection for seedling trees, &c., and were pictures of good cultivation; but it must be borne in mind that they required years of growth before they attained this solid, uniform mass of thorny growth and handsome outline. I could also name estates in Wiltshire in which it is no rarity to see well-cultivated Quick hedges. However I may remind "E. M." that I recommended the Myrobalan Plum as being superior to the Quick "as regards quickness of growth, and impenetrableness of fence" for hedging purposes. "E. M." says that it is a waste of time to wait twelve months before cutting down the Myrobalan Plum after planting, and is of the opinion that the plants should be cut down to within 15 inches of the ground as soon as planted. This is not my opinion, as I prefer any kind of plants intended for permanent hedges to push their roots well into the ground, and make free top-growth the first year, cutting them down the following spring. "E.M." admits that the "Myrobalan Plum will grow much more rapidly than

Quick," adding "that he had never seen a thick base to any hedge made with this plant." This no doubt was owing to the fact that the plants were not pruned to within a foot or 15 inches of the ground the first year after planting, as recommended by me on p. 29. Or it may have been caused by the plants having been cut down as soon as planted, in order not to waste time. *H. W. Ward.*

THE EVESHAM GARDENERS' FRENCH TRIP: WILL IT BEAR FRUIT?—Some of the older of the Evesham gardeners have expressed themselves as very doubtful of the result of trying to force Lettuce after the French method in Evesham, and point out that as many as twenty years ago they tried to force Lettuce under the bell-glasses is done near Paris. But they forget that they did not try the right variety, and it is pretty certain that they did not prepare the seed-bed as the Frenchman does. Everything depends upon that work being properly performed. Then it is claimed that the atmosphere in the valley of the Avon is too humid, and that the plants will damp off. The remedy for that is care and attention in the ventilation of the frames and cloches. The difficulty of obtaining manure is probably more imaginary than real; it can be bought in Birmingham at a reasonable figure, and the railway companies are certain to grant special rates, for they already carry manure from London 108 miles into a fruit-growing district for 4*s.* 6*d.* a ton. They would be sure to do the same for Evesham if properly approached, and that would bring the cost of the manure up to about 6*s.* a ton. Would the Lettuce sell if grown? is also asked; and the answer to that is, that the Frenchman with expenses heavier than those of the Evesham grower can send to Covent Garden and pay a freight of 80*s.* as against the Evesham man's 25*s.*, and still make a handsome profit. The experiment is to be made. In a week or so the retired gardener who conducted the Evesham men through the Vitry and Ivry gardens will be in Evesham for the purpose of giving demonstrations of how the Frenchman sets to work. It is hoped that he will be accompanied by another gardener, who is likely to remain in the district for at least two years, for a very large firm of growers are negotiating with a man to take an engagement for that period. We shall see what we shall see. Within the last few weeks a large number of glasshouses have been built close to Evesham, and from this it is evident that some of the younger generation of gardeners realise the importance of branching out in a fresh direction. It has always been a source of surprise that in this fertile valley so little use was made of glass, but this is now fast disappearing. Perhaps in no branch of their work do the Evesham men need instruction so much as in the packing and grading of their fruit and vegetables. Of recent years there has been a steady improvement in this direction, and less is heard of the pernicious and injurious habit of "topping," for which the district held an unenviable notoriety, but there is still need for great improvement. A case bearing on the necessity of grading fruit occupied Judge Ingham and a jury for some hours on Saturday last. A gardener and dealer, of Hampton, near Evesham, sued a firm of brokers of Covent Garden for £39 2*s.* 10*d.* for breach of contract in the purchase of 300 "pots" of Blenheim Apples at 5*s.* a pot, the damages representing the difference between the contract price and what plaintiff realised when defendants refused to accept delivery. The contract was not disputed, and in it defendants contracted to buy 300 pots of best Blenheims at 5*s.* a pot, all the small to be sorted out. Two consignments of Apples were sent, and both were refused on the ground that there were a large proportion of seconds included. The difficulty with regard to the first consignment was adjusted, but when the second lot arrived the defendants refused to accept any more, so plaintiff had to sell the Apples as best he could. It was suggested on behalf of plaintiff that defendants found that they had bought the Apples very dear, and wanted to get out of the deal. A sample of the second consignment was produced by defendants, and a lot of expert evidence called, the consensus of opinion on that side being that the sample contained a large proportion of seconds, and that the best were not very special. For the plaintiff evidence was called to the effect that the fruit was sorted, and that only best Blenheims were sent. After a very long hearing the Judge summed up in the following words: "The only question I shall ask the jury is: 'Were the Apples which were rejected best Apples from which all the small had been sorted out? You have heard the expert evidence and you have seen the Apples. It is for you to decide the question.'" The jury after some consultation answered the question in the negative, but intimated that they would like to make a remark. This, however, they were not allowed to do. Judgment was accordingly entered for defendants with costs. The defendants had entered a counter-claim, but withdrew it with the exception of one item, 8*s.* 6*d.* for three empties, which was admitted, and for which judgment for them was entered. *S.*

EARLY AND LATE PEACHES. — In reply to "L.," Isle of Wight, on page 64, in my opinion the best early varieties of Peaches are Alexander, Waterloo, Amsden June, and Hale's Early. These four varieties ripen in very close succession—so close indeed, that the second and third mentioned could well be dispensed with in gardens where space is limited. The best late varieties of Peaches are Crimson Galande, Princess of Wales, and Sea Eagle. If "L." has room only, for say six Peach trees, I should recommend the following varieties:—Alexander, Hale's Early, Early Grosse Mignonne, Violette Hâtive, Crimson Galande, and Sea Eagle, which are all excellent varieties in every respect, being good growers and free bearers of fine, handsome fruits which colour well and are of excellent flavour when well ripened. If space would permit of three more trees being planted in the cool-house referred to, Early Rivers, Lord Napier, and Pine-apple Nectarines would yield a fairly good succession of large, handsome fruits of good quality. *H. W. Ward.*

CHRYSANTHEMUMS TIED DOWN.—The illustration of "tied down" Chrysanthemums on p. 53 is perhaps, from a pictural point of view, rather taking, but I imagine few gardeners will attempt to copy Mr. W. C. Smith in his delicate and (to me) very painful task of destroying the natural beauty of habit that each variety possesses, besides rendering the flowers useless for cut purposes. It would be much better to select dwarf-growing kinds, of which there is an abundance of varieties, for the purpose. If cuttings be taken from the top growths at the end of May, and the plants grown on in 5 or 6-inch pots, they will make admirable subjects for placing on the front row of the stage, attaining a height of about 15 inches. Assuming that the Chrysanthemums are grown as bush plants, they should not be of the height mentioned, 5 to 7 feet being far too tall. Your correspondent does not state that his plants are grown as bush plants, but I infer this from the number of plants grown in each pot, and from the photograph of the distorted plants on the front stage. *A. Jefferies, Moor Hall Gardens, Essex.*

CEDRUS DEODARA ALBA SPICA (see p. 59).—Our trees of the above variety of Cedar are all of pyramidal shape, and each has a good leading shoot. I recently saw about fifty trees growing in a nursery, but did not notice one of spreading habit. Are Mr. Harris's trees much exposed to strong winds? *C. Page, Dropmore Gardens.*

APPLE LANE'S PRINCE ALBERT.—Here in Co. Kilkenny this Apple is very satisfactory; in fact, were I limited to one variety I should grow Lane's Prince Albert. With regard to its cropping capabilities, my experience is that young trees (on both the Crab and Paradise stocks) generally crop so heavily that if not severely thinned the fruits would eventually weaken the trees. Young trees never fail to carry a crop. The fruits develop an excellent colour for the variety, in proof of which I may say that at Dublin fruit show, held in October under the auspices of the Department of Agriculture, we were placed 1st in a class in which there were fifty-three competitors, and were 1st also at Belfast in November. The fruits do not keep well so late as March, but at present they are good and firm, and are very good eating even uncooked. The variety has been largely planted in this district during the last two years, under the direction of the Department of Agriculture, and I do not know any variety likely to give better returns. Bismarck is another variety that is proving satisfactory in these gardens, making healthy growth and cropping exceedingly well. I may say the soil here is of a warm, light nature. *J. G. W., Bessborough.* [Our correspondent sent excellent specimens of both varieties. Ed.]

—— I have found this Apple to be by far the most certain cropper, surpassing in this respect both Newton Wonder and Alfriston. The latter variety does not finish well here, and consequently shrivels with keeping. I find Newton Wonder keeps for the longest period, while Lane's Prince Albert keeps well to the end of February. I should certainly advise growers in this district to plant the variety, as it is a sure cropper. *Geo. Ellis, Nidd Hall Gardens, Ripley, Yorks.*

—— Mr. Thomas Salsbury in a recent issue asked for growers' opinions of that excellent Apple Lane's Prince Albert. We have no hesitation in saying that in our opinion it has no equal, its cropping capabilities are not comparable with those of any other culinary Apple, and with regard to its colour and appearance we saw several tons of this Apple almost as highly coloured as that grand dessert variety Worcester Pearmain. Bramley's Seedling runs it very close in cropping capabilities, but in weight we find Lane's Prince Albert far ahead. A small fruit of the latter variety will turn the scale at ¾ lb., and will keep in condition till the end of March, being now in as good condition as when picked. No doubt your correspondent picked his fruits before they were ready for gathering. *Mr. Nye, Manager, Walpole Orchard Co., Walpole, Wisbech.*

PUBLICATIONS RECEIVED.—*Almanack* for 1905, from Messrs. Kent & Brydon, Darlington.—A *Pocket-book*, from Messrs. Bakers, nurserymen, Wolverhampton and Codsall.—Nova Scotia: *Provincial Government Crop Report*, November, 1904. The whole season proved unfavourable to growth in many parts of the Province, but the failure is not serious enough to discourage the hopes of the farmers for the future. — *Cassell's Popular Gardening.*—*The Faraday House Journal*, January. This is the Journal of the Students of the Electrical, Standardizing, Testing, and Training Institution in Charing Cross Road.—*The Banana in Hawaii.* By J. E. Higgins. From the Hawaii Agricultural Experiment Station. Bulletin No. 7.—*The Royal Garden Diary and Daily Remembrancer* for 1905. From Messrs. W. Wood & Son, Wood Green, London.—*Index Seminum in hortis musei Parisiensis, anno* 1904 *Collectorum* (Seed-list from the Natural History Museum, Jardin des Plantes, Rue Cuvier, Paris).—From the University of Illinois Agricultural Experiment Station. Circular No. 82: *The Physical Improvement of Soils* (with special reference to the value of organic matter, by J. G. Mosier; and Bulletin No. 95: *The More Important Insect Injuries to Indian Corn*, by S. A. Forbes.

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM GRATRIXIANUM (SECT. PAPHIOPEDILUM), HORT. SANDER.

UNDER this name Messrs. Sander & Son, of St. Albans, exhibited as a new species the plant here illustrated (fig. 35). The flowers have so much of the appearance of those of some forms of C. insigne or of C. exul, if that be considered as distinct, that its position as a separate species is a matter of opinion, but the habit is different, and we are told that the leaves are broader than in any form of C. exul. The plant is tufted, the leaves 20 cent. long, 4 cent. wide, coriaceous, glabrous, linear-oblong, channelled in the middle of the upper surface, midrib prominent beneath, tapering to the base, where they are sharply folded and purple-spotted. Apex rounded, minutely notched. The flowers measure 11—12 cent. across at their widest expansion, and are borne on a scape which is covered near the top with fine purplish hairs. Bract oblong lanceolate, purple-dotted, conduplicate, rather shorter than the three-sided, three-ridged ovary. Standard broadly obovate undulate, puberulous on the outer surface, contracted but not recurved at the base; greenish at the base and for two-thirds of its length; upper portion and margins porcelain-white, the whole studded with rather large, nearly circular purple spots. Lower sepal about half the size of the upper one, shorter than or very slightly exceeding the length of the lip, oblong, greenish with a few purplish dots; lateral petals spreading, slightly incurved, oblong-spatulate, wavy at the margins, pale greenish-brown, and shining; lip of a similar but deeper colour, with a shell-like convolute prolongation on either side; column slightly hairy at the base; staminode roundish, flattened, yellowish, villosulous, with a shining projecting boss near the apex. The most striking differences between this plant and C. exul are to be found in the habit, foliage, and in the standard, which tapers to the base, and in the side-lobes of the lip, which are more prolonged. The plant is a native of Annam.

The drawing was made in the nursery of Messrs. Sander, and the description was drawn up from a specimen kindly furnished by those gentlemen. *M. T. M.*

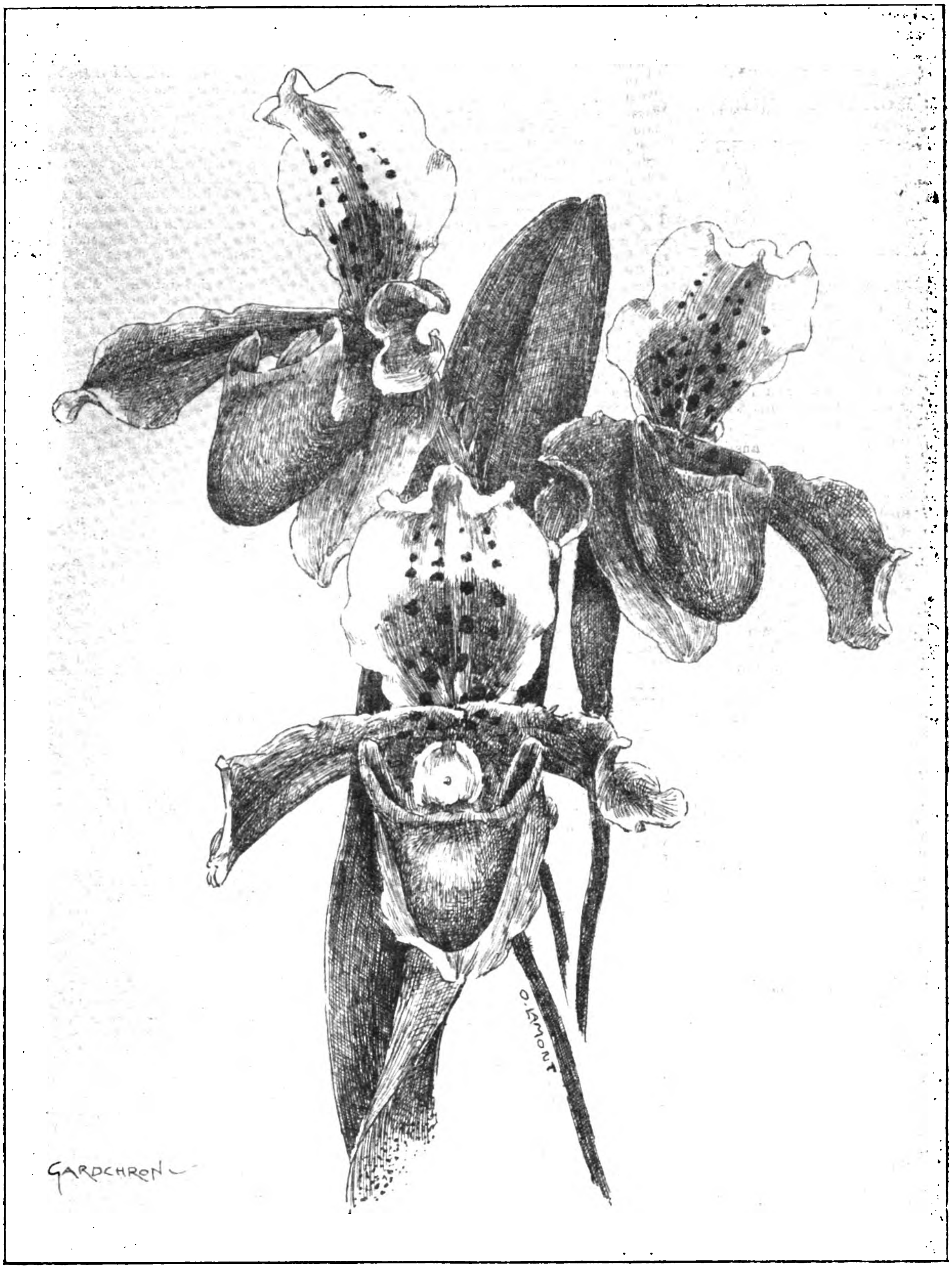


FIG. 35.—CYPRIPEDIUM (§ PAPHIOPEDILUM) GRATRIXIANUM (HORT. SANDER).
Flowers greenish-yellow, dorsal sepal porcelain-white above, purple-spotted

Obituary.

JOHN KITLEY.—We regret to have to announce the death of Mr. John Kitley, for the past few years manager to the Orchard Company, Ltd., Scotby, Carlisle. Mr. Kitley was well known as a practical horticulturist, and was well versed in Agriculture and Forestry. For many years he managed the extensive estates of Rothiemurchus, Inverness-shire, removing from there to

Warwick, from thence to Derby, and finally ending his useful career at Scotby, where his integrity won for him the esteem of all those who came in contact with him. He leaves a widow, four daughters and two sons to mourn his loss.

James Edward Ransome.—On January 30, in London, after a short illness, James Edward Ransome, of Holme Wood, Ipswich, aged 65 years.

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

January 24.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Drs. Cooke and Rendle; Messrs. Michael, Massee, Saunders, Bowles, Shea, Gordon, Odell, Hooper, Holmes, Chittenden (Hon. Sec.).

Henslow Testimonial.—Dr. Masters reported on this, and announced that the presentation would be made at a meeting of the Scientific Committee in March.

Big Bud in Hazel.—Mr. Saunders reported upon this as follows:—"The Hazel buds are certainly attacked by mites, which very much resemble the Black Currant mite both in appearance and in their manner of life, but according to the great authority on these creatures (Dr. A. Nalepa) they are different species. If he is correct, the mites from the Nut bush would probably not attack the Currant bushes. The species attacking the Hazel is Eriophyes Avellanæ. the other is E. ribis. The study of this genus of mites is very difficult, as the mites are quite invisible to the naked eye; consequently the mounting of specimens for examination under the microscope is by no means an easy task. These mites attack plants in a great variety of ways, some attacking the buds, others the leaves, forming blisters on them, as in the case of the 'Pear-leaf blister mite,' or curling the edges of the leaves, like the species which attacks the Hawthorn, or forming the galls like little coral beads on the upper side of the leaves of the Maple, or the curious 'nail galls' on the leaves of the Lime. If the Nut-bushes are badly attacked, I should certainly root them up and burn them; otherwise cut out the infested shoots and burn them, keeping a good look-out for further infestation, which should be at once treated in the same manner." Mr. Michael remarked that it was extremely unlikely that the same species of mite would attack plants so widely different as the Hazel and the Currant, although species are known that attack more than one plant. Mr. Gordon stated that he had seen Hazel growing near Black Currants attacked by the bud-mite, while that in other parts of the same garden was free; but this might have been because the conditions were favourable for both kinds of mite.

Spots on Phyllocactus.—Dr. Cooke reported as follows on this:—"The dark convex spots near the edge were hard and somewhat resembled "sclerotia," but no mycelium or spawn could be found, nor anything which could be construed into a fungoid structure. What the dark bodies are must still remain as a 'puzzle for the curious.'"

Branch of Ash Fasciated.—Mr. Odell showed a specimen of this common growth, cut from the tree 10 feet above the ground.

Slime-fungus on Walnut.—Mr. Davidson sent a Walnut having the fungus Phycomyces nitens growing upon it.

Mite on Bark of Apple.—Mr. Griggs sent a piece of Apple-bark infested with the mite Orobutta lapidaria. The mite is frequent upon the bark of Apple-trees, but causes no injury to them.

Disease of Beech-trees.—Dr. Cooke reported upon the specimens sent to the last meeting, on which the common fungus, Tubercularia vulgaris, was growing. The stumps growing near by had another fungus, Xylaria hypoxylon, upon them.

Pear, Diseased.—The decay in the Pear brought to the last meeting by Mr. Shea, which appeared as brown spots in the flesh, nothing being visible on the outside, Dr. Cooke attributed to the fungus which caused the "brown rot" of fruit, and to which the black Apple recently exhibited also probably owed its peculiar appearance.

Gall on Eucalyptus occidentalis. — Mr. Holmes showed specimens of this on bark, known commercially as Mallet-bark. A large quantity is being imported from Australia for tanning purposes. Mr. Saunders took the specimen to examine further.

Spraying Apparatus.—Mr. Holmes also showed a simple form of spraying apparatus which is shortly to be put upon the market.

Fungus on Peach-tree. — Mr. Hooper brought a fungus found growing on a Peach-tree. Mr. Massee took the specimen to report upon at the next meeting.

Spirits of Tar for Wounds on Trees.—Mr. Hooper asked whether this might be used, and both Mr. Gordon and Mr. Shea spoke of excellent results arising from its use.

Cyclamen-leaves discoloured.—Dr. Cooke reported on Cyclamen-leaves received from Stevenage that the rusty spots showed no sign of fungus. It was suggested that the injury was probably caused by a mite similar to, if not identical with, the Begonia-mite.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

WORCESTER AUXILIARY.

January 16.—This branch held their annual meeting at Worcester on the above date. Owing to the unavoidable absence of Sir Frederick Godson, M.P., Mr. W. Crump was voted to the chair.

A most satisfactory balance sheet on the year's working was presented and adopted, the accounts showing a balance of over £100 to the good. Upwards of £16 net had been received by the Society from the opening of Madresfield Court Gardens during last May. Three sums of 5 guineas each from this collection were offered and accepted by three members of the Auxiliary, willing to contribute similar sums and thus constitute themselves life members, at the same time doubling the amount originally available for handing over to the parent Society.

There being no county candidate this year votes were given optionally to the most deserving candidates. The Chairman pointed out that before this auxiliary branch was formed more money was received from head-quarters by pensioners in this county than was subscribed by the whole of the gardeners and gentry in the same area.

Altogether some £775 had been forwarded to the parent Society. Still, it was felt by all the members that there were many gardeners in the county who ought to become guinea subscribers, and it was finally resolved that every member should try to introduce one fresh member during 1905. Also that more gardens could be opened to visitors and thus benefit the Society, as is done at Madresfield Court, if their employers' consent could be obtained by those in charge. Madresfield Court Gardens will be again opened on the first Thursday in May. *Corr.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

January 19.—At the meeting held on the above date Messrs. Sander & Sons, St. Albans, staged a fine group of plants, amongst which were several good Cypripediums. Awards of Merit were given to Zygopetalum × Mackayo-crinitum, a handsome, intensely-coloured flower; Cypripedium × nitens var. splendida, C. × nitens var. "Mammoth," C. × Phœbe var. exquisita, and C. × Lady Wimborne. A First-class Certificate was awarded to C. × Rolfeæ var. stupenda (Silver Medal).

E. Ashworth, Esq., Wilmslow (gr., Mr. Holbrook), exhibited Cypripedium × vexillarium var. Rougierii and Cattleya chocoensis alba, the latter having previously been dealt with by the Committee.

Philip Smith, Esq., Sale (gr., Mr. Kitchin), exhibited a good plant of Cypripedium × J. Howe.

A. Warburton, Esq., Haslingden, staged three fine Cypripedes, viz., C. × Euryades Sander's var., C. × aureum var. Hyeana (both of which received First-class Certificates), and a seedling from C. Leeanum var. Albertiana × C. insigne, which was given an Award of Merit.

M. Vuylsteke, Ghent, staged a small and interesting group of various hybrid Odontoglossums (Vote of Thanks).

Messrs. J. Cowan & Co., Ltd., Gateacre, had a good group of Odontoglossums, Cattleyas, Cypripedes, &c., for which a Silver Medal was awarded.

G. W. Law-Schofield, Esq., Rawtenstall (gr., Mr. Shill), obtained a Silver Medal for a well-grown collection of distinct Cypripedes, principally hybrids, amongst which was a fine form of C. × Euryades.

Mr. D. McLeod, Chorlton-cum-Hardy, was given a Vote of Thanks for a small group of Cypripedes. *P. W.*

WOODBRIDGE HORTICULTURAL.

January 20.—The annual meeting of the Woodbridge Horticultural Society was held on the above date. The chair was taken by Mr. John Loder, J.P. There was a large attendance.

The Hon. Secretary (Mr. John Andrews) reported that the £25 Rose Challenge Cup had been won four times by Mr. Cant, of Colchester, and therefore became his property. It was resolved that a prize of £5 be given this year instead of a cup.

The Hon. Secretary announced that he must tender his resignation after this year's show. This decision was received with very great regret. Mr. Andrews said he should always take an interest in the Society, and would do all he could for it; but the time had come when he must ask to be relieved of the burden and responsibilities of the secretaryship. Eventually the question was referred to a sub-committee.

LONDON DAHLIA UNION.

January 24.—A meeting of the supporters of the Union was held at the Hotel Windsor, Victoria Street, on the above date. Mr. John Green, Chairman of the Union presided, and there was a good attendance; in addition a number of letters were received promising continued support. The Annual Report congratulated the members on the success of the exhibition held at Earl's Court in September last.

There was keen competition in most of the classes, especially in that for twelve bunches of Cactus Dahlias. Mr. Gledstanes has generously promised to continue his prizes in 1905 and in 1906.

Arrangements are being made for holding an annual exhibition in the Prince's Hall at Earl's Court during the third week in September in the present year. The balance sheet showed an income of £69 1*s.* 9*d.*, and an expenditure of just over £67, leaving a small balance to be carried forward. Mr. John Green was re-elected Chairman of the Union, and Mr. R. Dean, Secretary, and both were thanked for their past services. Much regret was expressed at the absence of the Secretary through illness.

CROYDON HORTICULTURAL MUTUAL IMPROVEMENT.

January 25.—The fifth annual dinner was held at the Greyhound Hotel on the above date, under the Presidency of Mr. J. J. Reid (President of the Society), the vice-chair being taken by Mr. R. Hooper Pearson, of the *Gardeners' Chronicle*. The tables were decorated with plants and flowers.

The attendance was large, the arrangements were perfect, and the gathering was a most successful and pleasant one, affording every encouragement for the holding of similar meetings in the future. When the Chairman had proposed the toast of "The King," the Vice-Chairman proposed that of "The Society," which he said had now 133 members. He hoped the Society would continue to progress, and that it would give attention to the science as well as to the practice of gardening, and thus help gardeners and employers to obtain the utmost pleasure and profit from their gardens.

Mr. Douglas Young supported the toast, and Mr. H. Boshier (Hon. Secretary) in reply gave a very encouraging account of the Society's circumstances.

Mr. M. E. Mills gave "Kindred Societies," and this was responded to by Dr. Jackson.

The Chairman presented the prizes awarded for essays, the prize-winners being as follows: "Pruning and Training of Hardy Fruit Trees," 1st, Mr. T. W. Briscoe; 2nd, Mr. W. A. Cook: "Birds of Our Gardens," 1st, Mr. J. Sugden; 2nd, Mr. H. Peckham.

Other toasts included that of "The Chairman," and "The Horticultural and Local Press.'

The proceedings were enlivened by songs and instrumental music.

NATIONAL CHRYSANTHEMUM.

January 25.—A meeting of the Committee which carried out the Market Show at Essex Hall on December 14 last was held at Carr's Restaurant on the above date Mr. R. Ballantine, Chairman of the Committee. presiding. The secretary, Mr. R. Dean, presented a balance-sheet showing receipts from subscriptions of £26 10*s.* 6*d.*; medals given as prizes, £8 18*s.* 3*d.*; tickets sold and payments at the doors amounted to £2 10*s.* 6*d.*; showing a total of £37 19*s.* 3*d.* On the credit side medals were awarded to the value of £21 7*s.* 9*d.*; hire of hall, £5 5*s.*; printing and circulating the schedule, £1 15*s.*; show expenses, £8 3*s.* 1*d.*; leaving a small balance to be carried forward. Great satisfaction was expressed that the show receipts had covered all the expenses. A general opinion was expressed that the show should be repeated during the present year, and various suggestions were thrown out, all of which will be considered by the Committee at a meeting to be held shortly.

In the evening a large number of supporters of the show dined together at Carr's Restaurant, under the presidency of Mr. R. Ballantine, the tables being prettily decorated with Chrysanthemums supplied by Mr. Geo. Prickett. Mr. D. Ingamells acted as dinner secretary, and everything passed off in the pleasantest manner possible. Great satisfaction was expressed at the first appearance of Mr. R. Dean after his severe illness.

ABERDEEN CHRYSANTHEMUM.

The annual meeting was held in the Round Room, Music Hall Buildings, Aberdeen, on Saturday evening, 28th ult. Mr. J. C. Minty presided in the absence of the usual chairman, Mr. Esslemont. The Committee's statement showed that the Society was in a flourishing condition. The annual exhibition was held on the 18th and 19th November, and they had to congratulate themselves on its success. The total funds at the credit of the Society was now £195 9s. 11*d*. The total income for the year was £414 8s., and they had increased their balance by £49. The Report was unanimously adopted. The meeting then proceeded to the election of office-bearers, when the following were elected:—Hon. President, Lord Provost Walker; President, Mr. James Esslemont; Vice-President, Mr. A. Kynoch. A committee of twenty was also elected. Mr. M. H. Sinclair was re-appointed Secretary and Treasurer. It was decided to hold this year's show on November 17 and 18.

GARDENERS' DEBATING SOCIETIES.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—This Society held its fortnightly meeting on January 17, Mr. W. P. Bound in the chair, there being about ninety members present. The subject of the lecture was "The Influence of Manure on Plants," given by Mr. Howard, of Wye College, who has arranged to give a series of three lectures on this subject. Mr. Howard dealt in a very lucid and comprehensive manner with his subject, pointing out the best methods of storing and preserving stable or animal manure in order to maintain all the manurial properties until applied to the plant. He also went very minutely into the analysis of artificial manures. A very helpful and interesting discussion followed.

CARDIFF GARDENERS'.—At a meeting held at the Sandringham Hotel on Tuesday, January 24, Mr. T. Clarke presiding, Mr. H. R. Farmer, Cardiff Castle, gave a very interesting lecture, entitled "Plants and Floral Decorations Suitable for a Private Establishment." Many valuable hints were given upon the colouring of foliage and upon other details. The lecturer advised the use of very light and graceful flowers and foliage for dinner-table decoration, and the use of the most graceful plants for grouping about the interior of the mansion. Mr. Mayne opened the discussion, which was well taken up by the members. *J. J.*

CHELMSFORD AND DISTRICT GARDENERS'.—At the weekly meeting on Friday, January 27, Mr. Hammond, of Widford, gave a paper on "Orchids." He traced the history of their introduction into England, and referred to the 330 genera and 4,000 species now known. The speaker spoke of the difficulties collectors have to contend with. Often on reaching England a rare specimen is found to be dead. The speaker dealt fully with the method of culture, and showed the fallacy of the old idea that Orchids were too difficult for the average man to grow. In the discussion that followed, the use of leaf-mould in growing Orchids was deprecated, and it was the opinion of many members that the unattractive appearance of Orchids when not in flower was a hindrance to their ever becoming popular conservatory plants. *S. M. C.*

BATH GARDENERS' SELF-HELP AND DEBATING.—The fortnightly meeting of the above Society was held on Monday, January 23, Mr. T. Parrott occupying the Chair. There were several excellent exhibits on the tables, including Cyclamen and Cinerarias. The minutes of the Committee meeting contained proposals for forming a sick benefit club, and for holding a Chrysanthemum show in November. Eight new members were added to the roll of the Society. A presentation has been made to the Society of a number of books on gardening. The Chairman opened a discussion on Mushroom-culture, which formed the first of two subjects for debate during the evening. After this subject had been well discussed, Mr. Bickerstaff commenced a debate on Cyclamen. *G. G. McL.*

CHESTER PAXTON.—The second meeting of the above Society was held on Saturday, January 28, at the Grosvenor Museum, Chester, when Mr. R. Newstead, A.L.S., the Curator, delivered a lecture on "Some Common Birds of the Orchard and Garden." The lecturer said the fact is well known that certain birds inflict injuries upon fruit-trees and their products, and also upon some of our cultivated vegetables, but it is not equally well known that they are in many instances of great service in destroying the insect-pests of the garden. Mr. Newstead's remarks were based entirely upon the personal investigation of some 2,000 stomach contents of birds, supplemented by careful observations in the field. The lecture was fully illustrated. The vagaries of the bullfinch, the greenfinch, the titmice, and the starlings were much discussed at the close of the lecture.

KINGSTON GARDENERS'.—At the last meeting of the above Society Mr. Mills, of Coombe House Gardens, Croydon, gave a paper on "Chrysanthemums," chiefly from an exhibitor's point of view. The lecturer described in detail the methods of cultivation he had found suitable from practical experience, asserting that careful attention to small details is the secret of success in Chrysanthemum-growing. Valuable information was given on cultural points and on exhibiting the flowers. The dreaded "rust" disease was said to be overcome by the use of "Bentley's Mildew Specific," which should, however, be used at double strength on fully-developed foliage. Numerous diagrams were used to illustrate the remarks. *J. T. B.*

SCHEDULE RECEIVED.

KIDDERMINSTER AND DISTRICT HORTICULTURAL SOCIETY'S Daffodil Show on Saturday, April 15; Summer Show on Saturday, July 15; and Dahlia Show on Saturday, September 16.

MARKETS.

COVENT GARDEN, *February* 1.

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.
Anemones, pink, p. 12 bunches.	2 0-3 0
— fulgens, per doz. bunches.	3 0-4 0
Carnations, per doz. bunches.	9 0-12 0
Fern, French, per doz. bunches.	6 0
Freesias, p. doz. bunches ...	2 0-3 0
Lilac, per bunch.	3 6-4 0
Marguerites, per doz. bunches.	2 0-3 0
Mimosa (Acacia), per basket ...	6 0-10 0
Narcissus, per basket... ...	8 0-12 0
Ranunculus, per doz. bunches.	9 0-15 0
Roses, per dozen blooms ...	1 0-2 0
Violets, blue, per dozen bunches. ...	2 6 4 0
Parma. per large bunch...	4 0-5 0

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Acacia Drummondi, per doz.	18 0-24 0
Aralia Sieboldi, doz.	4 0-6 0
Aspidistras, green, per doz. ...	18 0-24 0
— variegated, per doz. ...	30 0-42 0
Azalea indica, p. doz.	30 0-42 0
— mollis, p. doz.	24 0-42 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0
— Sprengeri, doz.	8 0-12 0
— tenuissimus per doz. ...	8 0-10 0
Begonia Gloire de Lorraine, doz.	12 0-18 0
— Turnford Hall, per doz. ...	9 0-15 0
Boronia megastigma, p.doz.	24 0-30 0
Calla æthiopica, per doz. ...	10 0 12 0
Cinerarias, dozen	10 0-12 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	18 0-30 0
Cyclamen persicum, per doz.	12 0-15 0
Cyperus alternifolius, p. doz.	3 0-5 0
— laxus, p. doz.	3 0-4 0
Dracænas, p. doz.	9 0-21 0
Daffodils, Yellow Trumpet, doz.	6 0-9 0
Ericas, per doz....	12 0-18 0
Euonymus, p.doz.	4 0-9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
— in 32's, p. doz.	9 0-18 0
Ficus elastica, p. doz.	9 0-12 0
— repens, p.doz.	6 0-9 0
Genistas, per doz.	9 0-12 0
Hyacinths (3 in a pot), per doz.	8 0-12 0
— Roman, in boxes, each...	3 0-3 6
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Latania borbonica, per doz. ...	9 0 15 0
Marguerites, doz.	6 0-10 0
Primula sinensis, per doz. ...	4 0-6 0
— obconica, doz.	4 0 6 0
Solanum capsicastrum, per doz.	6 0-12 0
Spiræa japonica, per doz. ...	8 0 12 0
Tulips, in boxes, each	1 6-2 6

Foliage Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 9-1 0
— — medium, each ...	0 4-0 6
— — short sprays per bunch...	1 0-2 6
— Sprengeri ...	0 9-1 6
— tenuissimus..	0 9-1 0
Adiantum cuneatum, doz. bun.	6 0-9 0
Croton leaves, doz.	1 0 2 0
Cycas leaves, each	1 0-1 6
Fern, English ...	3 0-4 0
Ivy-leaves, bronze	1 6-2 0
— long trails, per bundle ...	1 0-2 0
— short green, per doz. bnch.	1 0-1 6
Myrtle	3 0-4 0
Smilax, p. bunch	4 0-6 0
Hardy foliage (various), per dozen bunches	3 0-6 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, bushel ...	2 0-5 0
— English, sieve or half bushel	1 0-3 6
— — per barrel.	8 6-12 6
— Newtown Pippin ...	41 0 —
— — per case ...	15 6 —
Bananas, bunch.	6 0-10 0
— loose, dozen...	1 0 —
Chestnuts, bag ...	14 0 —
Chow-Chows, per dozen	2 6 —
Cobnuts, per lb. .	0 5 —
Cranberries, per box	10 6 —
Custard-Apples, per dozen ...	6 0-15 0
Grape-Fruit, per case	10 0 —
Grapes, Gros Colmar, p. lb.	1 0-1 6
— Muscat,	4 6-7 0
— Alicante. lb.	1 0-1 3
— — per barrel.	15 0-20 0
Lemons, per case	9 0-10 0
Lychees, per box.	1 9 —
Oranges, per case	8 6-12 6
— Blood	8 6 —
— Navel	14 6 —
— Jaffa, per box	10 6 —
— Seville ...	5 6 —
— Mandarines (420)	8 6 —
Pines, each ...	2 0-3 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	2 0 —
Asparagus, bunch	7 0 —
— Giant	7 0-10 6
— Paris Green...	5 0 —
— Spanish, bunch	1 9 —
— Sprue, per doz.	9 0 —
Beans, dwf., p. lb.	3 6 —
— Madeira, per basket... ...	3 0 —
Beetroot, bushel	1 6 —
Brussels-Sprouts, bag	2 0 —
Cabbages, p. tally	3 6 —
Carrots, 12 bunch.	2 0 —
— bag	3 0 —
Cauliflowers, doz.	1 6 —
— Cherbourg ...	2 0 —
— Italian, bskt.	3 4½ —
— St. Malo, doz.	2 0 —
Celeriac, per doz.	2 0 —
Celery, doz. bnchs.	9 0 —
Cress, doz. pun.	0 9 —
Cucumbers, doz.	5 0-8 0
Curled Kale, bush.	1 3 —
Endive, per doz,	2 0 —
Garlic, per lb. ...	0 5 —
Horseradish, foreign, p. bunch	0 10 —
Mint, per dozen...	3 0-4 0
Leeks, doz. bndls.	2 6 —
Lettuces, Cabbage, per dozen ...	1 4 —
Mushrooms (house) per lb.... ...	0 10 —
Onions, pickling, per sieve ...	5 0-6 0
— English, cwt.	15 0-18 0
— Foreign, p. bag	13 6 —
— Valencia, per case... ...	14 6 —
Parsley, per doz. bunches ...	2 0 —
Parsnips, per bag	3 0 —
Peas, French, per flat	6 6 —
Potatos, per ton	60 0-100 0
Radishes, p. doz. bunches ...	0 7-0 9
Rhubarb, York, per dozen ...	1 3 —
Salad, small punnets, per doz	0 9 —
Savoys, per tally	4 0-5 0
Seakale, per doz.	12 0 —
Shallots, p. sieve	4 0 —
Tomatos, per box	12 0-16 0
Turnips per doz.	1 6 —
— per bag ...	2 0 —
Turnip-tops, bag	2 0 3 0
Watercress, per doz. bunches.	0 6-0 8

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per doz. bun..	4 0-6 0
— mollis, per dz. bunches ...	12 0-15 0
Bouvardia, white, per doz. bun.	4 0-6 0
— scarlet and pink, per doz. bunches ...	4 0-5 0
Calla æthiopica, per doz. blooms	3 0-6 0
Camellias, per dz. blooms	2 0-3 0
Carnations, best American vars., per dz. blooms	3 6-6 0
— smaller blooms, per doz. bun..	18 0-30 0
Cattleya labiata, per doz. blooms	8 0-12 0
Chrysanthemums, best blooms, pr. dz. blooms	2 6-6 0
— in bunches, per doz. bun..	9 0-24 0
Cypripedium insigne, per doz. blooms	2 6-3 6
Daffodils, single yellow, per dz. bunches ...	6 0-9 0
— double, per dz. bunches ...	7 0-9 0
— Golden Spur, per doz. bun.	8 0-10 0
— Henry Irving, per doz. bun.	6 0-7 0
— princeps, per doz. bunches.	6 0-8 0
— Sir Watkin, per doz. bun.	9 0-10 0
Dendrobium nobile, 12 blooms.	2 6-3 0
Eucharis grandiflora, 12 blooms	3 0-4 0
Euphorbia jacquiniæflora, per bunch	1 6-2 6
Gardenias, per dz. blooms	2 0-3 0
Hyacinths, Roman, per doz. bun. ...	4 0-6 0
Lilac (English forced), per bun.	6 0 8 0
Lilium auratum, per bunch ...	2 6-3 0
Lilium longiflorum, bunch	4 0-5 0
— lancifolium rubrum and album, p. bun.	2 0-3 0
— tigrinum, bun.	2 0-2 6
Lily of the Valley, per dozen bun..	6 0-18 0
Marguerites, white, per dozen bun.	3 0-4 0
— yellow, per dz. bunches ...	3 0-5 0
Narcissus gloriosus, per doz. bun..	3 6-5 0
— paper-white, per doz. bun..	2 0-3 0
— Pheasant's Eye, doz. bun.	10 0-12 0
— Soleil d'Or, per doz. bun..	3 6-4 0
Odontoglossum crispum, pr. dz. blooms	2 6-3 0
Pancratiums, per dozen blooms...	3 0-4 0
Pelargoniums (Show), white, per doz. bun..	4 0-6 0
— (Zonal) double scarlet, per doz. bunches.	8 0-12 0
— salmon and pink, per doz. bunches ...	6 0-8 0
Poinsettias, per dozen blooms...	4 0-8 0
Roses, Niphetos, pr. dz. blooms	2 0-6 0
— Bridesmaid, pr. dz. blooms	4 0-6 0
— Kaiserin A. Victoria, per dozen blooms	6 0-9 0
— C. Mermet, pr. dozen blooms	6 0-12 0
— Sunrise, per dozen blooms	3 0-4 0
Tuberoses, per dz. blooms ...	6 0-8 0
— on stems, per doz. bunches.	9 0-12 0
Tulips, per dozen bunches... ...	8 0 12 0
Violets, blue, English, per dz. bunches... ...	2 6-3 0

POTATOS.

Dunbars, 90s. to 100s.; Teneriffe, 14s. to 16s. per cwt.; Algerian, per lb., 4*d*.; Jersey, per lb., 6*d*.; various, home-grown, 60s. to 65s. per ton. *John Bath*, 32 & 34, *Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

THE amount of trade has not varied much during the past weeks, and most subjects remain at about the same prices. Indian Azaleas continue plentiful; and of these the white varieties and those of a pink or salmon shade of colour sell better than the "reds." Among Ericas there are now persoluta alba and fastigiata, both small-flowering white varieties; E. gracilis vernalis, hyemalis, and melanthera all continue plentiful. Boronia megastigma in well-flowered plants is now seen. Acacia ovata, and A. Drummondi are good. Plants of Cyclamen improve in quality and are consigned by several growers, prices being well maintained for best plants. Cinerarias are plentiful. The strain grown for market is remarkable for the dwarf habit of the plants and for the bright colours of the flowers, which are not of large size. Hyacinths and Tulips are good in quality, and in all shades of colour. Some pot plants of the latter are seen, but the majority are grown in boxes. Lily of the Valley continues to be plentiful both in pots and in boxes. Daffodils are more plentiful; on Tuesday morning prices were lower. Begonia Gloire de Lorraine and the white variety can be had in good plants. Primula sinensis is seen but the plants are of poor quality. Well-flowered plants of Primula obconica sell moderately well. Codiæums (Crotons) and Cordylines are seen in good plants. Other foliage plants are plentiful. Palms, including Areca lutescens, Cocos Weddelliana, Phœnix reclinata, are very good, with the usual plentiful supply of Kentias, Latanias, &c. Prices for Palms generally are low. Of Ferns there are now much larger supplies of the small sizes, and prices are low. Good plants in 48's, in all the usual market kinds, are plentiful; but in some varieties larger plants are not quite so numerous.

CUT FLOWERS.

Very little that is new among cut flowers is to be reported. Tulips are the most prominent, being seen on every side; some fine double varieties in crimson, pink, and yellow colours are seen; prices vary but little. Supplies of Daffodils were rather short this morning, and best flowers were making an advance of 1s. per dozen. The most prominent varieties seen are Sir Watkin, Henry Irving, Horsfieldi, Golden Spur, and princeps. Roses still continue very scarce; Niphetos is almost the only sort exposed for sale in any quantity; on Tuesday 15s. per dozen was being asked for best flowers of Catherine Mermet. Supplies of Chrysanthemum flowers hold out, and some good blooms are seen.

Orchid-blooms continue plentiful, and among them there is now more variety. In Carnations I find that the variety Enchantress commands 7s. per dozen for best flowers. Good prices are maintained for other sorts that are of sufficiently good quality. French flowers are more plentiful, but considerably short of what is usual at this season of the year. Double white Stocks may be added to the list, but they are very poor in quality. The French flowers have not recovered from the recent severe frost. Roses appear to have suffered very severely, and although some are arriving they are very poor in quality. *A. H., Wednesday, Feb.* 1.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending January 28, 1905.

1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
January 22 to January 28.	At 9 A.M.		Day.	Night.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	34	33	42	29	23	35	37	41	Tot 0·03	2	32

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending Jan. 28, is furnished from the Meteorological Office:—

"The *weather* during this week was dry and fine over the Kingdom generally, but slight rain was frequently experienced in the extreme North and North-West of Scotland.

"The *temperature* was below the mean in nearly all parts of England, as much as 4° in England, S.W., but in England, N.E. and Ireland, S., it just equalled it, and in Ireland, N. and over Scotland, was 1° or 2° above it. The highest of the maxima were in almost all cases recorded on Saturday, when they ranged from 54° in Scotland, E. and England, N.E., to 50° in England E. and S.W. The lowest of the minima occurred, as a rule, either on the 26th or 27th. In England, S.W. and England, S. (at Llangammarch Wells and Swarraton), the thermometer fell to 16° and 18° respectively, but elsewhere the minima ranged from 21° in the Midland Counties to 27° in Ireland, N., and to 31° in the Channel Islands.

"The *rainfall* was less than the mean in all districts. Over the East of Scotland and the greater part of England the fall was extremely slight; at several stations there was no measureable quantity.

"The *bright sunshine* was in excess of the mean over the major portion of the Kingdom, but deficient in Ireland, N., and also in Scotland, N. The percentage of the possible duration ranged from 46 in the Channel Islands, 33 in England, S.W., and 31 in England, S., to only 14 and 11 respectively in Ireland, N., and Scotland, N."

THE WEATHER IN WEST HERTS.

Barometer remarkably high.—This has been a week of changeable weather, but on the whole rather warm. On the warmest day the highest reading in the thermometer screen was 56°, and on the coldest night the exposed thermometer showed 15° of frost. The ground is at the present time at about an average temperature at 1 foot deep, but about 2° colder than is seasonable at 2 feet deep. On two mornings the grass on the lawn was coated with hoar-frost when the temperature of the air was from 5° to 8° above the freezing-point. This unusual phenomenon was no doubt due to the frozen condition of the ground keeping down the temperature of the grass when the air above it was comparatively warm. No rain worth mentioning has fallen for over a fortnight. Small amounts of rainwater came through both percolation gauges on each day during the week. The sun shone on an average for 3¾ hours a day, or for about 2 hours a day longer than is usual at this season. On the 29th ult. nearly 7 hours of clear sunshine was recorded—making it with one exception the most sunny day I have yet recorded here in January. The atmosphere was very calm at the beginning of the week, but on the last day the velocity rose early in the morning to 18 miles an hour—direction west. The mean amount of moisture in the air at 3 P.M. fell short of a seasonable quantity by as much as 9 per cent. For three days the barometer continued singularly high, and on the 28th at midnight it stood at 30·98 inches, which is the highest reading I have yet recorded here. *E. M., Berkhamsted, January* 31, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 72.]

TRADE NOTE.

MR. F. J. CROOK, since relinquishing the charge of Hall Court Gardens, consequent on the death of Captain Murray Aynesley, has commenced business for himself at Brookside Nurseries, Curdridge, near Botley, Southampton.

ANSWERS TO CORRESPONDENTS.

APPLE: *G. F. T.* The shoots are badly cankered, the canker being probably due to a fungus, Nectria, and there is an abundance of insect eggs. Cut the trees hard back; or if you can plant them on a different site it will be well to do so.

BIRD: *Gardener.* The beautiful bird you send is the brambling (Fringilla montifringilla); it is also known in some parts of the country as the mountain finch. It visits us in autumn and winter, its presence and relative abundance depending in a great measure upon the severity of the weather on the Continent. Your specimen, on dissection, was found to contain Beech-masts (their favourite food) and a few seeds of the Knot-grass.

BOOKS: *Gardener.* The Handbook of the Farm Series, published at 2*s.* 6*d.* each, includes *The Live Stock of the Farm,* and *The Dairy of the Farm,* either of which would be suitable for your purpose if you can obtain them from a second-hand bookstall. If not, apply to Messrs. Vinton & Co., Ltd., 9, New Bridge Street, Ludgate Circus, E.C., who publish a number of similar works.

BULBS DISEASED: *J. S.* The roots of the bulbs are completely destroyed by the bulb-mite, Rhizoglyphus hyacinthi, which are present in immense numbers. For preventive measures see p. 40 of the issue for January 21, 1905.

CATTLEYA TRIANÆ: *M. L.* Your Cattleya Trianæ seems to have made premature growth, which failed to mature in consequence of the absence of the necessary degree of light, and probably air, to maintain it in health. Cut off this growth and place the plant near to the glass of the roof of the house in which it is growing, and keep the material about the roots moderately dry until new growths appear.

CAPE GOOSEBERRY: *A.* The cultivation of this plant is not at all difficult, and it will thrive in any common garden soil. It is best propagated from seeds and by division of the plants. You should keep them somewhat on the dry side in a cool greenhouse until the spring; they can then be started into growth and should readily produce their inflorescences followed by the inflated calyces enclosing the fruits, which are edible.

CHINESE PRIMULAS: *R. M.* Are all the flowers parti-coloured? The combination of crimson and blue, if not due to a bruise, is very curious.

EUCHARIS BULBS FAILING TO FLOWER: *A.* Although we find no specimens of the Eucharis-mite on the bulb you forwarded, there are indications that this pest is present in the stock. This, however, would not be sufficient to account for your bulbs not flowering. The reason appears to us to be due to their small size, the specimen sent being much too small to develop a strong flowering spike. Encourage the bulbs to develop by affording them a temperature of from 65° to 70°, rising to 80° in the summer, giving them plenty of water except for a few weeks in autumn. Many skilful gardeners experience much difficulty in successfully flowering these plants. On p. 412 of our issue for December 10, 1904, you will find a note from a correspondent who gives details of his plan of flowering these plants successfully.

FERN ROOTS: *W. B.* We find no insects on the roots of your Ferns. Probably what you have seen on the roots is the White Fly that is so common in houses where Tomatos are grown. Your plants showed signs of being pot-bound. Remove some of the old soil and repot the plants.

GARDENERS' NOTICE: *Gardener.* The foreman is only entitled to claim a week's notice.

NAMES OF FRUIT: *M. E. B.* 1, Ross Nonpareil; 2, Claygate Pearmain; 3, Norfolk Beefing.—*A. R.* Lord Lennox.—*B. Y.* 1, Forfar; 2, Chelmsford Wonder.

NAMES OF PLANTS: *A. H.* Retinospora squarrosa.—*Constant Reader, Leicester.* 1, Cypripedium barbatum; 2, Dendrobium primulinum, rather common in gardens; 3, Begonia hydrocotylifolia; 4, Fittonia argyroneura.—*C. H.* 1, Eranthemum pulchellum: 2, Polypodium glaucum; 3, Asplenium bulbiferum; 4, Selaginella viticulosa; 5, Davallia Mooreana; 6, Caustis flexuosa.—*A. B. W.* Dendrobium cariniferum, and a narrow-petalled form of Lælia autumnalis.—*Thurso.* 1, Dendrobium primulinum; 2, Phalænopsis Stuartiana; 3, Epidendrum polybulbon; 4, Hæmanthus puniceus.—*J. H., Severn.* One of the garden-raised forms of Begonia subpeltata.

ORCHID-GROWER: *W. P.* Advertise in the horticultural papers of those colonies you desire to settle in; or you might apply to the authorities at Kew Gardens, who fill many colonial appointments, although they generally have suitable men of their own staff who receive these appointments. Try the larger Orchid-growing firms, such as Messrs. Sander, St. Albans, who are often requested to furnish competent men.

PLANTING EARLY PEAS AND POTATOS: *T. L., Sandown.* In such a warm and sheltered position as you describe, first early Peas may be sown during the last week in January or during the first week in February, selecting a fine day for the purpose and when the soil is fairly dry. If the ground at the time of planting is at all heavy and wet, the drills should be drawn somewhat deeper, say, at a depth of 5 inches, and an inch and a half of drier and finer soil placed at the bottom of the trench, similar soil being placed over the Peas when sown. When the drills are filled in the soil should be heaped up so as to form a small ridge over the drill in order to throw off excessive rain. Mice are often very destructive to early-sown Peas, therefore a sharp look-out must be kept for these pests and set traps. The first or second week in March (according to the state of the weather) is early enough to plant first early Potatos out-of-doors. If planted before this time, and a spell of cold weather follows, the tubers often rot in the ground. In order to ensure early and satisfactory crops, it is advisable to look over seed Potatos without delay, arranging them in single layers in shallow boxes or on the floor of a light cool room from which frost is excluded. Here they will soon start naturally into growth, and when planting time arrives they will have formed sturdy "chits" or growths an inch or two in length. At the time of planting the Potatos must be handled with all possible care so as not to damage the young growths. The rows should be planted at a distance of 10 inches apart, and 2 feet should be allowed between the tubers.

POTATOS: *G. R.* We cannot undertake to name varieties of Potatos. Send them to a trade grower, who may be able to assist you by comparing your tubers with his named varieties.

TREE FERN: *Constant Reader.* You will incur no danger of losing your plant if it is severed, but you must be particular afterwards in syringing the stem frequently in order to keep the aërial roots moist. Maintain plenty of atmospheric moisture in the house. Reduce the leaf surface if possible by removing any leaves that can be spared. Place a layer of sand beneath the stem when replanting. See note respecting Tree Ferns on p. 70.

COMMUNICATIONS RECEIVED.—La Mortola—E. M. H.—D'O.—Jas. Veitch & Sons—F. Mason Good—F. C.—E. C. C. D. (next week)—W. W.—S. W. W.—G. P.—J. W. H.—G. J. D.—J. Wiles—J. R. G., Buslingthorpe—W. F.—E. G.—G. W. S.—W. M. F.—Sir Michael Foster—F. J.—S. H., California—J. O'B.—E. M.—J. E.—F. Street—J. R. J.—J. J. W.—R. D.—J. H. (many thanks, but the photographs are unfortunately very poor)—H. J. W.—S. J. P. & Co.—W. M.—T. D.—J. H.—A. C.—J. W.—A. H.—C. E. T.—G. S.—M. Bros.—Yeh.—F. H.

THE

Gardeners' Chronicle

No. 946.—*SATURDAY*, *Feb.* 11, 1905.

CONTENTS.

Apiary, the 91
Apple Lane's Prince Albert 90
Books, notices of—
  Botanical Magazine . 89
  Country Day by Day . 83
  Fruticetum Vilmorinianum 89
Brussells Botanic Gardens 91
Chrysanthemums ... 85
Cordyline australis and indivisa... 91
Cypripedium × Leeanum "J. Gurney Fowler" 88
Digging, right and left-handed 90
Drip in greenhouses, to prevent 86
Electricity, plants, and fogs 90
Eugenia Ugni fruiting in the open 89
Fig-trees dropping their fruits 96
Florida garden, a ... 81
Fog and frost, effects of, on plants 91
Forestry 82, 90
Frost in Tunis 89
Gardeners' Association, the British 93
Grapes, record bunches of 96
Horticultural instructors, qualifications of 96
Jasminum nudiflorum. 90
Law note 92
Oaks, growth of durmast 82
Obituary—
  Schwacke, Dr. Wilhelm 92
Orchid notes and gleanings—
  Orchids at Westfield 83
  Stenoglottis fimbriata 84
Peaches for forcing, varieties of 91
Plants, new or noteworthy—
  Corbularia monophylla × Narcissus Tazetta 82
  Vanda Watsoni ... 82
Potatos, cooking tests of 83
Seeds for transit, packing 90
Societies—
  Gardeners' Debating 94
  Linnean... ... 89, 93
  National Chrysanthemum 93
  Royal Horticultural 89
Thames Embankment gardens, the 88
Tomato-disease, a new 92
Transplanting trees or shrubs 90
Treloyhan House, St. Ives 84
Week's work, the—
  Flower garden, the... 87
  Fruits under glass ... 87
  Hardy fruit garden... 87
  Kitchen garden, the . 87
  Orchid houses, the... 86
  Plants under glass ... 86

ILLUSTRATIONS.

Alternaria Solani, a new disease of Tomatos 92
Brussels Botanic Gardens, a view in the winter-garden of the 91
Cypripedium × Leeanum "J. Gurney Fowler" (Supplementary Illustration)
Drip in Greenhouses, a simple appliance to prevent 86
Narcissus, a new hybrid 82
Tomato disease, a new... 92
Treloyhan House, Cornwall.. 84
View in Treloyhan House Gardens, overlooking St. Ives Bay, Cornwall 85

A FLORIDA GARDEN.

On April 5, 1904, after an absence of about nine months in Philadelphia, I returned home to my place among the hills of Orange County, Florida. In Savannah I saw gorgeous masses of Azalea indica in full bloom, the bushes being frequently 7 or 8 feet high and as much in diameter. The fragrance of Noisette, Tea, and Hybrid Perpetual Roses was noticeable everywhere. In Bonaventure Cemetery I noticed the fine effect of groups of large Camellias in combination with Magnolia grandiflora and Azaleas. Only a few lingering blossoms were seen among the huge Camellia-bushes, their principal flowering time being the months of February and March. In Jacksonville I found great clumps of Crinum asiaticum, and tangled masses of Bignonia Tweediana in full bloom, while the delightful fragrance of the Maréchal Niel Rose and other Tea Roses was perceptible everywhere.

I found my garden in the full splendour of its spring garment. The Amaryllis hybrids of my specially robust evergreen strain were in their full glory; their brilliant hues almost dazzled the eyes. The glowing red varieties appear as if sprinkled with gold-dust, while many of the light-coloured ones are delightfully fragrant. How noble they look, and how far superior they are to the true Lilies, particularly in regard of brilliant colouring and varied hues! Large beds of the orange-coloured Amaryllis (Hippeastrum equestre) were a sheet of glowing orange-red, which could be seen from quite a distance. Low bushes of Lantana Camara were a mass of orange and yellow, violet and primrose. They are in bloom here throughout the year, if not cut down by sharp frosts. Leonotis Leonurus, embellished with enormous quantities of orange-yellow-coloured flowers, arranged around the stems, is a feast to the eye when at its best. The air was impregnated with the delightful perfume of the Maréchal Niel and woodland Margaret Roses which grew vigorously along the verandah. Here we also find Clerodendron Balfouri and Allamanda Williamsi covered with blossoms, the first one pure white with red, and called here "bleeding heart"; the second with brilliant yellow flower tubes. The Bottle-brush shrubs are as conspicuous as they are beautiful, particularly the larger-growing crimson Metrosideros robusta, the scarlet M. lanceolata, Callistemon rigidus and C. speciosus, and a species with rosy-purplish dense flower-trusses. The bottle-brush-like flowers are very conspicuous, terminating each twig, and creating an almost magic effect among the Palms, Cycads, Cypresses, and Magnolias. They belong to the most valuable open-air shrubs we have in Florida. Magnolias—including about twenty different varieties of M. grandiflora—are, together with the Palms, the glory of my garden. They begin to open their flowers during the last days of March, and lingering blossoms may be detected as late as November. These grand, creamy flower-chalices are always deliciously sweet-scented.

The fragrance of the blossom of Magnolia glauca, Datura suaveolens, Hall's Honeysuckle, and Oleanders, is almost overpowering. While strolling around in the garden for the first time since I came home, I scarcely knew which way to turn, there were so many objects to be seen, and many of the plants had made such a tremendous growth that I scarcely recognised them again. Strobilanthes Dyerianus, Acalypha Godseffiana, Solanum azureum, and S. Wendlandii, Maranta arundinacea, Cuphea micropetala, Aphelandra aurantiaca, Cassia floribunda and others, had made a wonderful growth around the house and alongside the verandah. I planted them just before I left for Philadelphia in July of the previous year; they were all small pot-plants when I set them out. Cardinal redbirds fluttered through the tangled labyrinths of Elæagnus Simoni and E. reflexa and the dense specimens of Cupressus torulosa and C. Knightiana; mocking-birds, cat-birds, thrushes, and Carolina wrens chanted their sweetest melodies, crested flycatchers whistled, blue jays screamed, ground-doves cooed, quails uttered their call-notes, woodpeckers hammered, and the savage cries of a brood of young butcher-birds in the garden were heard. My colony of purple martins, consisting of sixteen pairs, were busily engaged with nest-building, and their happy and joyful life adds a great charm to the place. Every morning with sunrise, and often before, I stroll around in the garden, examining plants and observing birds. One morning I discovered a Surinam Cherry-bush (Eugenia Micheli) with ripe fruits of the size of a Plum. The colour is glossy red, the fragrance very aromatic, and the taste of the juicy fruit, though peculiar, is very delicious. Many of the different species and varieties of Cocos Palms were in full flower; others had almost ripe fruit.

The Australian Silk-Oak (Grevillea robusta).

The crowning glory of my discoveries, however, was a tall Grevillea robusta in full bloom. While looking up in the dense tree, covered with an abundance of deep green foliage, I saw in the interior of it a glowing mass of colour. This was caused by an enormous wealth of bloom in the central part of the tree; but there were no flower-trusses on the extremities of the branches. The colour of the very peculiar flower-racemes is a deep orange-scarlet suffused with yellow, which contrasts in a marvellous way with the foliage, which is deep glossy green on the upper side and silvery-white underneath. The flower-trusses, often three and four together in one bunch, are found close to the branches, and fifty to sixty are frequently scattered along one small twig. The discovery of this flowering tree was quite a sensation to me. I had never before beheld the blossoms, and their beauty and brilliancy far exceeded my expectations. Among the greatest pleasures of gardening are the surprises in store for us. The flowers lasted in full beauty for a month.

Grevillea robusta is quite a common tree here, being known by the very inappropriate name of "Silk-Oak" or "Fern-tree." The tree in itself is highly ornamental and always beautiful. The specimen which was in bloom with me is a particularly fine variety, different from all the other Grevilleas in my grounds. The flowers were very brilliant, and the display was a most charming one when seen from below. A few flower-racemes are very interesting, but when they appear in dense masses the effect is glorious. I had always been under the impression that the flowers were rather insignificant, and that the whole value of the tree was to be looked for in the beautiful foliage and symmetrical growth. Since I had the chance to see the beautiful combination of flowers and foliage I have a much higher opinion of Grevillea robusta.

The tree, which consists of three trunks, is about 30 feet high. It is a picture of health and beauty, being surrounded by several plants of Cocos campestris, a large red Oleander and several specimens of Phœnix canariensis. From above it is sheltered by the crown of a long-leaved Pine (Pinus palustris). The whole group is a very striking one. The tree is about ten years old. I planted it out in the fall of 1897, when it was about three years of age and 2 feet high. Previous to this it had served as an ornament in a lady friend's home at Milwaukee.

Grevillea robusta is the only member of the family Proteaceæ which thrives to perfection in my Florida garden in high, dry Pine land. Even closely allied species, such as G. Hilliana, G. Preissii and G. Thelemaniana, did not grow with me. Although remaining healthy for several years they did not make any growth and finally pined away. The beautiful Silver tree (Leucadendron argenteum), from the

Table Mountain of South Africa, which is such a grand success in the gardens of Santa Barbara and elsewhere in Southern California, was an entire failure in my garden. But Grevillea robusta thrives like a native even on the poorest sand, though in rich soil it grows much faster, soon attaining a large size and a very healthy appearance. If manures are not applied to the plant the leaves often have a yellowish cast instead of the deep glossy-green hue. Most of my trees were killed to the ground during the big "freeze" in February, 1895, which made such a terrible havoc among the Orange groves of Florida. They soon sprouted again and formed fine specimens. None of them, however, has attained the size and beauty of the one referred to in the above. They all seem to be different from it in growth, and the foliage is not as dense and deep green. If well cared for, Grevillea robusta is one of the most beautiful and magnificent exotic ornamental trees we have in Florida—certainly the finest of all the Australian trees, which, as a rule, are very precarious with us.

All the species of Eucalyptus, with the exception of E. robusta, soon lose their beauty, and finally perish apparently without a cause. The very pretty Flame-tree (Brachychiton acerifolium) grew with me with great vigour for several years, but it suddenly died. The fine Acacias grow to an enormous size in the course of a few years, but they likewise die out suddenly. Only the rather tender Tristania conferta and the different species of Callistemon and Metrosideros grow well in my garden, but the Grevillea robusta excels them all. Indeed, I do not know of another exotic tree that is so successfully grown. It has all the good features of an ornamental shade-tree—rapid growth, fine form, beautiful foliage, and brilliant flowers. It is easily raised from seeds. Being of very easy culture, and thriving perfectly well in the dry atmosphere of a living-room, it is well adapted for the plant-lover. For this purpose it is largely grown by our florists for home decoration, and large numbers are annually sold under the name of "Fern-trees." Perhaps the many beautiful allied species, which are famed for their gorgeous flowers, would do well in Florida if grafted on Grevillea robusta. *H. Nehrling, Florida.*

NEW OR NOTEWORTHY PLANTS.

A REMARKABLE HYBRID NARCISSUS.

A LONG time ago, twelve years ago at least, and possibly fourteen or fifteen, I made an experiment which perhaps may be classed among what Mr. Darwin used to call "fools' experiments." I placed the pollen of a florists' variety of Narcissus Tazetta on the stigma of a flower of Corbularia monophylla previously deprived of its anthers. I have mislaid my notes, and in what I have to say I must trust to my memory only. The flower gave me ripe seeds (I forget how many), some of which germinated and produced bulbs. The foliage of the young bulbs—longer, broader, and stouter than that of the female parent—led me to suspect that the pollen had produced an effect; and this was confirmed by the experience that the bulbs, cultivated in a pot in a cool greenhouse, would not, even after several years, flower. Seedlings of C. monophylla flower well within four or five years.

I then planted-out the bulbs in a cold frame. Here they seemed to thrive; the foliage grew bigger and stouter, but still no flower appeared. I was encouraged to persevere by a remark made to me by Mr. Engelheart—that hybrids in which N. Tazetta took part were very slow in flowering.

After the bulbs had remained in the cold frame for some years (four or five, I think), I took them up and repotted them. I found some of them much larger than, at least twice as large as, any bulb of Corbularia monophylla which had passed through my hands.

Last year one bulb flowered in a cold greenhouse, and this year some five or six have followed suit, the several flowers differing somewhat in size, but being otherwise much alike. They may be described as follows: The bulb bears from three to five stout, erect, dark green channelled leaves, each about 35 cm. long or less, and 3 mm. broad. A stout round scape 25 cm. (both leaves and scapes are probably somewhat "drawn up" by greenhouse cultivation) or less in height, bears one or two flowers, pure white save for the orange of the fairly abundant pollen, very like those of N. triandrus, except that the stamens are of equal length, and the cup is large and somewhat bell-shaped, as in my hybrid N. triandrus, crossed with Corbularia monophylla. In one flower the cup is most distinctly lobed; and possibly subsequent flowers may show other differences. Some flowers have a diameter, from the apex of one segment to that of the opposite, of 2·5 cm., the cup having a diameter of 1·5 cm.; other flowers are smaller. There is only a trace of fragrance.

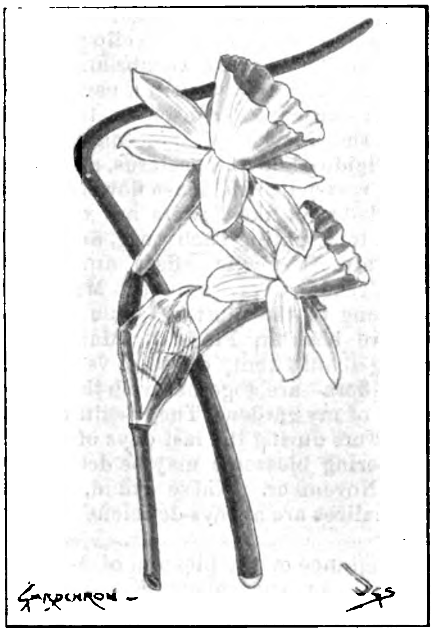


FIG 36.—A HYBRID NARCISSUS:—CORBULARIA MONOPHYLLA × NARCISSUS TAZETTA. FLOWERS WHITE.

Trusting to my memory alone I should say that the ripe bulbs resemble very fine bulbs of N. triandrus. I have now a score of bulbs; but some of these are off-sets, and I quite forget how many bulbs the seed originally gave me.

The plant is of little value on the ground of beauty, but is perhaps interesting as showing the nature of the product of two forms so distant as its two parents. Although I have had to trust to memory I do not think that any error has crept in during the long course of the cultivation of the plants. I do not know the origin of the florists' forms of N. Tazetta; but I imagine that they are "sports" or the products of selection rather than the results of any hybridisation, so that in dealing with them we are really dealing with N. Tazetta.

According to the system of nomenclature which I have suggested, I should call this hybrid Narcissus Montaz ×; but I am free to confess that my system, though intellectually very useful, rather strains what seems due to the ear. *M. Foster, Shelford, Cambs., January 30, 1905.*

VANDA WATSONI, *Rolfe, n. sp.*[*]

A striking new Vanda has been introduced from the interior of Annam by Messrs. Sander & Sons, St. Albans, through their collector, W. Micholitz. It is closely allied to V. Kimballiana, Rchb. f., which it closely resembles in habit, and when out of bloom the two are difficult to distinguish, but the flowers are very different in structure and colour. The flowers of V. Kimballiana have a stoutish spur 7 or 8 lines long; but in V. Watsoni this is replaced by a shallow sac scarcely 2 lines deep, while the front lobe of the latter is concave, fimbriate, and white, not flat, entire, and purple, as in the older species. Our novelty has the flowers entirely white, with the exception of the crest and interior of the sac, these being deep yellow dotted with red-brown. Other details of structure are given in the technical description. Good dried specimens have been sent to Kew by Messrs. Sander & Sons, and living ones by Mr. F. W. Moore, of the Royal Botanic Garden, Glasnevin, where the species has just flowered. It is dedicated, at Messrs. Sander's request, to Mr. W. Watson, Curator of the Royal Botanic Gardens, Kew. It grows at about 5,000 feet altitude, and will probably require the same treatment as V. Kimballiana and V. Amesiana, which three species form a very natural section of the genus. *R. A. Rolfe.*

FORESTRY.

GROWTH OF DURMAST OAKS.

I HAVE ventured on a former occasion in your columns to recommend the durmast or sessile-flowered Oak to North-country planters as preferable to the pedunculate species or sub-species. Unhappily the durmast Oak is no longer in the British market; those who wish to plant it must either collect their own acorns or buy them abroad; and the durmast does not bear acorns so frequently as the pedunculate Oak.

Nearly eight years ago, in the spring of 1897, we planted about two acres of ground where the great storm of December, 1894, had made a clean sweep of some Beeches about 100 years old. Wishing to make an Oak grove of the ground, we set it with three-year-old seedlings from acorns carefully collected from the fine durmast Oaks in Mr. Bagot's deer park at Levens, Westmoreland. These were planted widely, about 15 feet apart, and the intervals were filled with Larch, Corsican and Scots Pine.

The result has been as remarkable as it was unexpected. The Oaks have kept pace with the Larch, and have far outrun the Scots. Many of them are 12 feet high, an extraordinary growth in eight years from planting, and far beyond anything that a pedunculate Oak could do here. The soil is good and well drained, but not deep—about 14 or 16 inches of gravelly loam upon boulder clay; ground inclining gently to the east, but swept by sea winds from west and north-west.

---

[*] *Vanda Watsoni*, n. sp.—Plant almost identical in habit with Vanda Kimballiana, Rchb. f. Leaves subterete, channelled on the upper surface, up to 14 inches long by 2 lines broad, narrowed upwards and subacute, with membranaceous sheaths at the base, dull dark green. Scapes slender, a foot or more long, about 12-flowered. Bracts ovate-oblong, obtuse, 2 lines long. Flowers white, with some red-brown spots on the crest and interior of the sac of the lip. Dorsal sepal obovate-spatulate, obtuse, 9 lines long; lateral pair similar, but oblique at the base, 10 lines long. Petals 9 lines long, obovate-spatulate, obtuse, deflexed, twisted at the base so as to bring the back surface to the front. Lip 8 lines long by nearly 6 lines broad; front lobe cordate-elliptical, obtuse, fimbriate, concave, inflexed at the base till the margins meet, side lobes incurved, fleshy, truncate, with two acute angles, about a line long; base saccate; sac obtuse, nearly 2 lines deep, 1½ line broad from side to side, but only half as broad from front to back, deep yellow inside, dotted with red-brown, with an erect 3-lobed yellow callus filling the front of the sac. Column 3 lines long, white, its foot bearing a truncate or obscurely 3-lobed callus opposite to the one in the sac. Native of Annam. *R. A. Rolfe.*

I have drawn attention formerly to the comparative freedom of the durmast from galls. Examining this plantation to-day, I could find only two durmast Oaks with "apples" on them. One of these has received a severe twist in early youth, and carried about a dozen apples; the other, about 10 feet high, has four apples on it. But the growth from an old stool of pedunculate Oak in the middle of the wood was thickly set with apple-galls.

Recent authorities (Mr. A. C. Forbes is the latest) recommend the sessile-flowered Oak for dry and sandy soils. The prevailing character of our soil in the west of Scotland is moist, even where the drainage is perfect, owing to the humid atmosphere and the retentive subsoil. Yet the superiority of the durmast Oak over the pedunculate is very well marked, and it is a pity that nurserymen cannot be induced to supply it true. *Herbert Maxwell, Monreith.*

BOOK NOTICE.

THE COUNTRY DAY BY DAY. By E. Kay Robinson. (London: William Heinemann, Bedford Street, W.C.)

A BOOK such as is this, dealing with country scenes and illustrated with photographs, is always welcome. We have here a daily record of what Mr. Robinson sees of the bird and beast—especially the bird—and plant life around him, beginning with the frozen-out birds and withered leaves of January, and ending with the drooping flower-leaves of the Hellebore at the end of the year. The book makes no pretence to being a record of scientific observation, but is in fact just an account of everyday events in the country, such as most see though perhaps only the few observe or chronicle. In the paragraphs devoted to the winter days there is naturally a scarcity of incidents, and a tendency to fill up with general remarks; on the summer days there is plenty to be said.

By quoting part of the entry for May 25, we can show a very fair example of the author's style:—"The soft green fronds of the bracken are spreading wide in the glades, and the second act of the annual drama of the woodland opens. First came the dainty flowers of spring, blue Violets and pale Primroses, starring the soft earth, which was then all velvet-green with the budding points of later flowers; and these have carried on spring's scheme of colour music to a high crescendo of vivid pink and white, deep hazy-blue and pure golden-yellow. . . . The third act will come when the sunset hues of autumn begin to glow in the dying bracken-fronds in every shade of copper, gold, and bronze; and the fourth will follow when the brown and broken litter of dead Fern rustles to the stealthy tread of the pheasant listening to the beaters."

Mr. Robinson's "scrappy story," as he calls it, is not confined to one district of England only, but is intended to apply to the country generally, with due allowances made for variations in climate and seasons. We hope the facts he relates may teach many readers to observe and appreciate for themselves, if not to add their own share to the many modern books on nature-study.

POTATOS.

THE COOKING TEST.—Being much interested in Potato-culture, and having grown most of the new varieties during the last twenty-five years, I have been much impressed in reading the reports, &c., that have lately appeared in the *Gardeners' Chronicle* on that wonderful cooking test, "where," as you say, "the judges were called on to taste and deliver judgment on no fewer than sixty-seven varieties." Well may you ask, "How did they do it?" It has long been a belief with me that a Potato when cooked only retains its flavour for a certain time, a few minutes making a difference, so that in my opinion the cooking of sixty-seven varieties and the tasting of such a number must have been a most trying ordeal for the judges, and I should think that only a small portion of each variety could have been tested by any one of the judges selected.

In cooking Potatos more depends on the way the cooking is carried out than many think. Unless Potatos are cooked in their skins one never gets the real flavour, and it is seldom indeed that two varieties can be found that cook exactly alike—some sorts taking longer than others. As Mr. Mayne ably points out, p. 2, *Gardeners' Chronicle,* January 7, "soil is the most determining factor in flavour." When living in North Ayrshire, N.B., many years ago, we always broke up a portion of land that had been pastured for some years previously (termed old lea there). In the autumn this land was ploughed deeply, then well broken up and manured in spring previous to planting the Potatos. Under this method of cultivation it seemed to me that all varieties, or nearly all, were alike good, so dry and mealy that it was difficult to cook them, as they were very apt to break up in the cooking. Under this method of cultivation the yield per acre was less, yet the quality was all that could be desired, Here I have grown immense crops of beautiful. clean large tubers on land that has been under a Wheat crop the previous year, yet the cooking quality was deficient. In garden culture, of all the manures, &c., that I have tried nothing equals fresh lime freely used.

We generally trench down a brake of Strawberry plants each autumn, giving the land a fairly good dressing of farmyard manure at the time of trenching. In spring we spread a good coating of fresh lime over the surface of the ground and work it into the soil as the Potatos are planted, using five-pronged steel forks for the work. Last spring we had several of the newer varieties, including Sutton's Discovery, Northern Star, Sir John Llewelyn, &c. In planting these we used a good quantity of old hotbed materials—leaves and stable-manure—making an opening 7 or 8 inches deep, and half filled the opening with this material, to which were added some wood-ashes. The result was simply amazing as regards weight of crop and sound tubers, there being no signs of disease. In fact, I have never before seen such crops, yet the result is that the Potatos are wanting in quality, being soft and waxy when cooked. The variety Sir John Llewelyn is an enormous cropper, beautiful to look at, yet (with us at least) sadly wanting in quality when cooked.

I am surprised to hear that Potatos grown in Essex were better and more esteemed than those grown in Scotland. We are at the present time using a sample of "Langworthy" grown near Dunbar last season, and if any of those varieties from Essex are as good, then they are good indeed. I have frequently during the twenty years I have been in England, had Potatos quite as good in every way when cooked as any grown in Scotland in my experience, but then only when the seasons were favourable and when the seed came direct from Scotland. If it turns out that Potatos of better quality can be grown in Essex than in Scotland it will be the greatest event in Potato culture that has taken place. I fancy the farmers in East and Mid Lothians must be feeling very uncomfortable at present, especially some I know who cultivate for the London markets from 300 to 500 acres of Potatos annually. I have always been under the impression that it was the quality of those Potatos that created the sale for them in the London market; yet I must have been mistaken, as many others no doubt have been. I fancy there will need to be another "cooking" and "testing" match again before many are convinced of the folly of growing Potatos in Scotland for the London markets that are only second-rate as compared with Potatos grown so near to London as Essex is. *David Kemp, Stoke Park Gardens, Slough.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT WESTFIELD, WOKING.

A VERY remarkable collection of Cypripediums, Lælias, Cattleyas, and Lælio-Cattleyas has been got together by Francis Wellesley, Esq. (gr., Mr. Hopkins), and the plants thrive in a very satisfactory manner in the well-arranged houses provided for them.

One of the chief items of interest in the collection is the complete set of hybrids of the now nearly lost C. Fairrieanum. Of primary crosses of that coveted species Mr. Wellesley has C. × Princess, C. × Edward, C. × H. Ballantine, and the fine Westfield variety of it, C. × Mrs. F. L. Ames, C. × Juno, C. × Baron Schröder, seven very distinct forms of C. × Niobe, C. × Gaskellianum, C. × vexillarium and its varieties superbum, "Rex," and Rongieri; and four forms of C. × Arthurianum. Of secondary crosses of C. Fairrieanum, C. × vexill-Io, C. × bella, C. × Statterianum, C. × Norma magnificum, C. × Abraham Lincoln (Niobe × orphanum), C. × Minos, and the fine varieties Youngii, Westfield variety, magnificum and superbum, C. × Laura, C. × Imogene, C. × Little Gem, C. × Thalia, Westfield variety, C. × Arthurianum × insigne Sanderæ, C. × Niobe × Leeanum, C. × Niobe × Haynaldianum, C. × Niobe × philippiniense, and C. × vexillarium × Argus.

It will be seen that the pretty little C. Fairrieanum, although now at the vanishing point in collections, has played a very important part in the hands of the hybridist, and the field of its usefulness is being further developed at Westfield.

It has been advanced by hybridists that by inter-crossing the hybrids of C. Fairrieanum, and especially those nearest like it, that a seedling practically identical with the species may be obtained. But Mr. Wellesley has worked hard in this direction and with but little result, for the seed vessels obtained seem to have little or no good seeds in them. Out of 120 crosses between Fairrieanum hybrids made and sown at Westfield, but one small plant has resulted, although other hybrids are coming up in great profusion, some of them being the result of very wide crosses.

The hunt for C. Fairrieanum in the hills of Assam and other parts of India has been long continued, but hitherto fruitlessly. If, however, it is determined to have it in gardens again it will be obtained from its native habitat if the search is continued, before it will be raised by the means prescribed, if Mr. Wellesley's tests are final.

Cypripedium × Mrs. Francis Wellesley (Sanderianum × Gowerianum magnificum) is a most beautiful hybrid, flowering for the first time. Unlike some hybrids of C. Sanderianum, this is a robust grower, its handsome ivory-white foliage, barred and veined with dark green, being finely developed. The stout purple stem bears large flowers, the ovate-acuminate dorsal sepal white with heavily-blotched raised lines of chocolate-purple, the basal part tinged with pale green. The long, extended petals yellowish-white tinged with rose, and with an obscure green veining and many large warted blotches of chocolate-purple, those on the upper edge being furnished with long blackish hairs. The lip is large, and very suggestive of C. Sanderianum; cream-white tinged with rose on the face; staminode rose colour. It is a very beautiful and distinct hybrid.

Cypripedium × Mrs. Wm. Mostyn, figured in the *Gardeners' Chronicle*, February 1, 1902, p. 75, from the plant when it was awarded a First-class Certificate, is one of the handsomest hybrids ever raised, its fine dorsal sepal being bright purplish-rose of different shades with a broad white margin, and the yellowish lip and petals finely marked with red-brown.

The fine collection of species and hybrids of the C. niveum and C. bellatulum class are suspended near to the glass of the roof and sparingly watered until spring comes. One fine tuft of C. bellatulum album is pushing many growths and the remarkable yellow, purple-spotted C. × Wellesleyanum is now forming a fine specimen. Most of the hybrids of this class are in the collection, and all are found to be impatient of water on the foliage during cold dull weather.

Many pretty hybrids are in flower, and good batches of different forms of C. × Hera, C. × Sallieri, varieties of C. insigne. Especially fine are the specimens of the best forms of Cypripedium Lawrenceanum, of which even the reputedly slow-growing albino, C. Lawrenceanum Hyeanum, has made a sturdy specimen.

In the Cattleya and Lælia-house the occupants are in fine condition, and some of the best varieties are now represented by several specimens. By judicious dividing the plants are found to grow more vigorously and produce better flowers than when left in close masses. A batch of albino Cattleyas of the C. Mossiæ class are in grand health and showing well for bloom. Lælio - Cattleya × Eunomia Westfield variety has a model flower nearly equal in size to that of a good Cattleya Trianæ, and of a clear dark rose colour with purplish-crimson front to the lip. Lælio-Cattleya × Charlesworthii magnifica is like L.-C. × Cappei in size and in the rich coppery-orange tint of its flowers, the labellums of which are light reddish-claret.

Other showy Orchids were in flower, and many of the plants bore nearly mature seed capsules; but, thanks to the good cultivation accorded them, are still plump and vigorous. Among plants not in flower two instances were noted pointing to the difficulty of identifying imported plants by the appearance of their growths. In one instance was a plant of Cattleya × Hardyana imported with C. aurea, and exactly like C. aurea in growth. Another plant of it imported with C. Warscewiczii was totally different in growth, and with the rounder greener pseudo-bulbs and leaves of C. Warscewiczii. The second instance was of Lælio-Cattleya × Gottoiana. One imported with Lælia tenebrosa had the slender hard growths of that species, while the other got with C. Warneri was Cattleya-like in growth. In both cases there is but little difference in the flowers.

STENOGLOTTIS FIMBRIATA.

This rare and pretty South African terrestrial Orchid is in flower on several specimens in the gardens of Mrs. Brightwen, The Grove, Stanmore. The plants bear handsome crowns of bright green leaves, heavily barred and blotched with dark purple, arranged rosette-like close above the surface of the soil in the pots in which they are growing. The inflorescences arise from the centre of the growth, the scapes bearing leafy bracts spotted like the leaves, and terminal spikes of blush-white and pale lilac flowers. A number of strong plants of the more robust-growing Stenoglottis longifolia are in the same house, and some singular Satyriums, Disas, &c., Disa sagittalis being in flower, which, in common with many other rare and curious plants, Mr. J. W. Odell, the gardener at The Grove, cultivates very successfully. The Stenoglottis, Disas, &c., are grown in a warm greenhouse in winter and in a cool frame in summer. *J.*

TRELOYHAN.

THE Cornish residence of E. Hain, Esq., M.P., is situated on the cliffs overlooking St. Ives Bay, on both sides of which the coast is practically treeless. To the right, just across the bay, are the sand-dunes of Hayle, amongst which are scattered the huts and works of the National Explosives Company. Westwards the scenery and vegetation are typical of the wild North Cornwall coast—steep, rugged cliffs, and poor, shallow soil growing coarse grass, with patches of gale-stunted Heather and Gorse. These are the surroundings amid which Mr. Hain built his home, made his garden, and laid out his grounds. Trees, one would have thought, were wholly out of the question; but it is the trees at Treloyhan which strike one most upon approaching St. Ives. As will be seen in the illustration [see fig. 38], there is a healthy and vigorous plantation of mixed trees almost on the very edge of the cliffs. This plantation is composed chiefly of Sycamore, Ash, Beech, and the Cornish Elm.

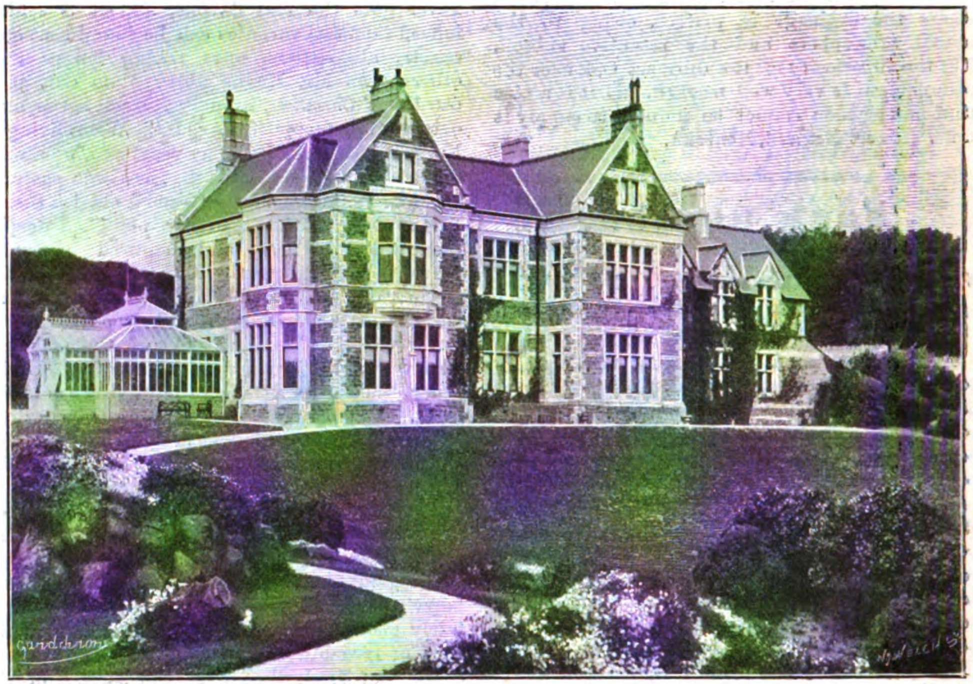


FIG. 37.—TRELOYHAN HOUSE, CORNWALL, THE RESIDENCE OF E. HAIN, ESQ., M.P.

The gardens were designed and laid out by Messrs. Robert Veitch & Son, of Exeter, whose well-known landscape gardener, Mr. Meyer, most skilfully took advantage of the slight natural undulations. Where possible, such depressions were increased, and in the shelter thus provided he planted tender shrubs. A disused mine-burrow which had been partially filled up provided an ideal site for a rockery, which in the short space of seven years has become well furnished. A dripping-well suitably planted is one of the features of this rockery.

Close by the rockery a fine variegated Phormium tenax has thrown up a vigorous flower-spike much stronger and more erect than the spikes of Phormium Cookianum, a species which flowers and seeds so freely in all parts of Cornwall. Many kinds of Iris are thriving here. and there is a small collection of hardy Ferns; while in the full sunshine a patch of Eschscholtzia was a blaze of colour last season. Next comes the nucleus of a collection of hardy Cacti, the most promising of which is Opuntia camanchica.

The shrubberies are already a feature of Treloyhan; for the most part they encircle the lawns, which are irregular in outline, and form a series of bold curves. At the outset large numbers of the commoner shrubs, Laurels of both kinds, Rhododendron ponticum, &c., were wisely planted to form screens and nurse-plants. These are being gradually removed, leaving the choicer kinds, which now appear well able to look after themselves. Most conspicuous among the many and varied shrubs are Griselinia littoralis, which seems to have an especial predilection for the Cornish air, and quickly forms large bushes; Veronicas in variety, Berberis asiatica, Geum, Cistus, Althæa frutex (Hibiscus syriacus), and, of course, many Escallonias, E. exoniensis ×, bearing masses of creamy-white flowers, was very good; the white E. floribunda also had a profusion of flowers, and the common E. macrantha, planted thickly along the top of a stone ledge, has quickly transformed an eyesore into an object of beauty.

CONIFERS.

An experimental planting of Conifers has been made. It is too soon to say which will succeed, but up to the present many are thriving. The tallest are upwards of 20 feet in height, and of them the most promising are Araucaria imbricata, Abies Nordmanniana, Cryptomeria japonica, Larix leptolepis, Picea excelsa, P. nigra, Pinus austriaca, and P. insignis; the latter tree does exceedingly well in Cornwall, and will withstand a considerable amount of wind. The deciduous trees which have grown the best are the common Ash, Sycamore, Turkey Oak, Cornish Elm, Service Tree, and the Purple Filbert.

As a whole Cornwall is not a Rose country; where they are grown with success the plants have to be frequently renewed. Out of a large collection planted nearly a decade ago only

Merveille de Lyon, Baroness Rothschild, Alfred Colomb, Marie Baumann, and Boule de Neige remain. These are healthy, and flower freely; so probably it is an instance of "the survival of the fittest."

The kitchen-garden is well stocked with the crops usually grown in a private establishment. The soil is light and sandy, but with deep digging and the frequent use of the hoe satisfactory crops of vegetables are produced. Potatos are grown in plots almost on the seashore, the standard varieties being Myatt's Prolific, Ashleaf, and Main Crop. Mr. Madge told me that the dreaded Potato disease is practically unknown! Can this immunity be due to the salt-spraying given by the gales?

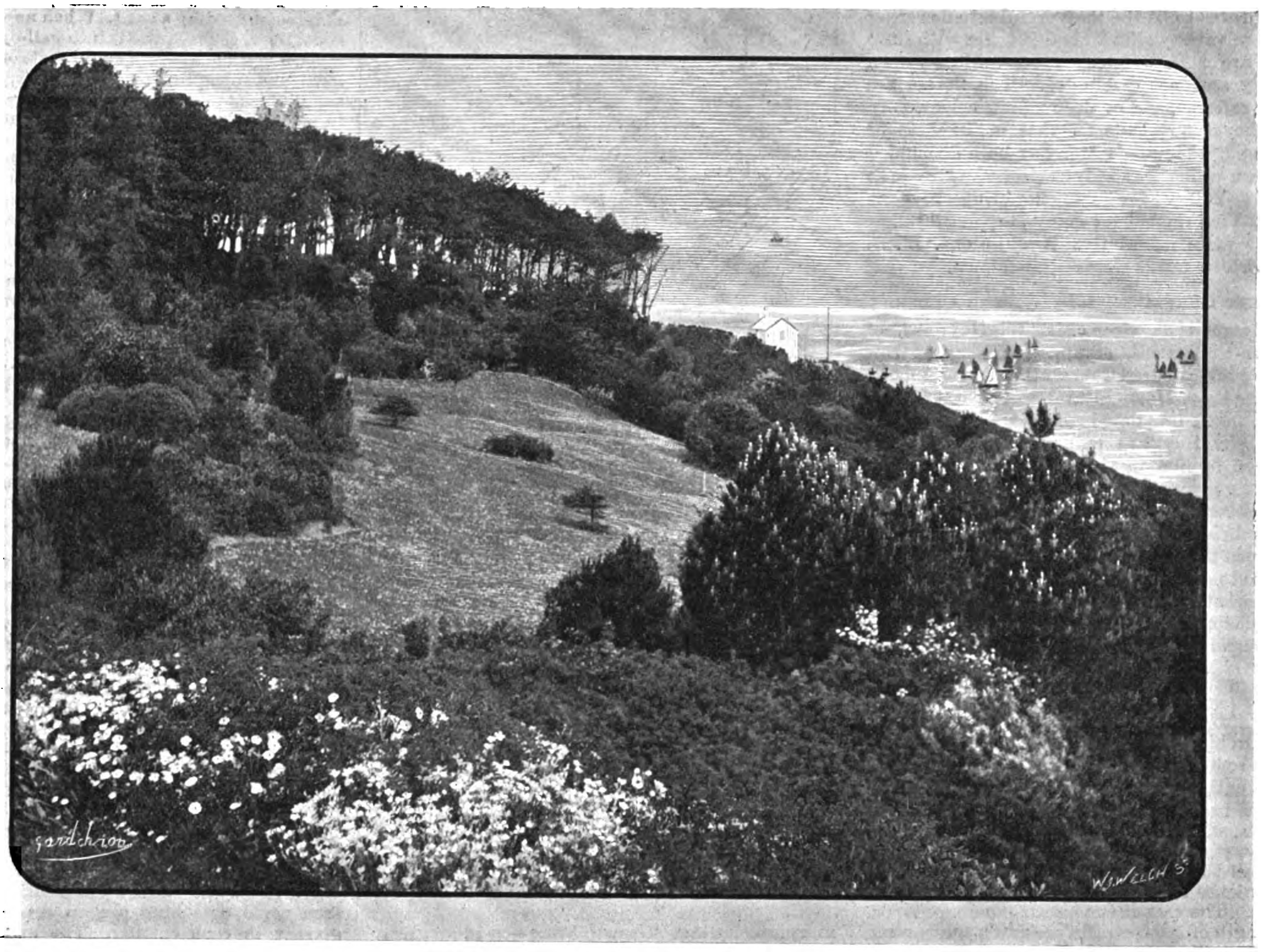


Fig. 38.—Treloyhan House: showing belt of trees overlooking St. Ives Bay, Cornwall.

Apples canker early; those which produce the best crops are Cox's Orange Pippin, Blenheim Pippin, Lane's Prince Albert, Rymer, Bismarck, Golden Noble, and Stirling Castle. Of Pears, Mr. Madge would name but three as being uniformly satisfactory—Bon Chrétien, Marie Louise, and Beurré d'Amanlis.

The Glasshouses.

The small conservatory attached to the mansion is well furnished with Palms, Begonias, Fuchsias, Ferns, Agapanthus—a pot of the variegated form in flower looked very neat. In the centre of the house, which is left clear for tea-tables, &c., stands a large cage containing Java sparrows and canaries, which strike a note of tropical colour.

In the vineries good Grapes are obtained; Golden Amber (well coloured and of good size), Foster's Seedling, and Madresfield Court Muscat were the best at the time these notes were taken.

The well-filled stove contains many useful and interesting plants, the most striking of which are Anthuriums in variety, several large pots of Pancratium, Allamanda Schottii, and the brighter-coloured A. nobilis, and, what I was surprised to see in a private garden, a fine plant of the "Bow-string Hemp," Sanseviera guineensis. *A. C. Bartlett.*

CHRYSANTHEMUMS.

French National Chrysanthemum Society.—From *Le Chrysanthème* we learn that the Society now numbers 721 members, inclusive of forty-seven affiliated societies—not a bad list for a ten-year-old society. The awards to seedling-raisers, made as a result of the certificates granted by the Floral Committee, were—1, a Gold Medal to M. Ernest Calvat; 2, a Silver-gilt Medal to M. Rozain Boucharlat; 3, a Silver Medal to M. Alfred Chantrier.

M. Viger, President of the National Horticultural Society of France, is also Honorary President of the French National Chrysanthemum Society, and has very ably conducted the proceedings at eight of the annual Conferences of the Society. This gentleman has recently been appointed Knight of the Legion of Honour.

Although a late Minister of Agriculture, M. Viger has acquired the reputation of being almost a Minister of Horticulture, and this his latest honour has been much appreciated by the gardening fraternity in his country, as it has by those English gardeners who know what he has done for the craft.

The colour-chart in course of progress, which will be issued under the auspices of the Society, will shortly be ready for publication. Each colour is represented in four distinct shades, and there will be approximately about 400 colours in all. Although published in French, it has been considered necessary to make it useful for florists in other countries, so that uniformity of colour description may be observed. It will therefore be in five languages. The French part, and the entire charge of the whole publication, is in the hands of M. Dauthenay, the German part is being done by Mr. Max Leichtlin, the Italian by Mr. N. Severi, the Spanish by Mr. Miguel Cortes y Coll, and the English by Mr. Harman Payne.

Following the example of the American and English sister societies, the French National Chrysanthemum Society is about to issue an official catalogue of Chrysanthemums. It will be published in instalments. *C. H. P.*

Chrysanthemums Tied Down.

In reply to Mr. Jefferies I may say that the plants illustrated were all bush plants. We do not "stop" them at all, but pick out all the latest plants in the autumn to tie them down, so as to produce a good effect at Christmas time. The photograph was taken about a week before Christmas. The flowers, as Mr. Jefferies stated on p. 76, are not much use after being cut and if long stalks are required; but we grow many bush plants and do not have to cut those that are tied down. We also grow some dwarf plants by rooting extra cuttings now, putting several in a 60-sized pot. They are planted out later on, and the tops of them are layered in July, as one would Carnations. I think these make better plants than those obtained from cuttings rooted in May. Plants under 3 feet high however are not much use for our purpose as they cannot be bent sharp down to cover the pots without breaking them. I presume anything trained in any shape or form would be in Mr. Jefferies' view objectionable; but tastes differ. The object we seek to obtain is a bank of flowers, and the illustration showed that this is secured. Chrysanthemums have been trained in this way here for several years past, and have been appreciated by all who have seen them. *W. C. Smith. The Gardens, Ecton.*

CHRYSANTHEMUM ALLMAN'S YELLOW.

This proves to be the most useful late-flowering decorative variety that I have yet met with; the flowers are 2 to 3 inches across, when grown naturally and not disbudded. The florets are slightly reflexed, and of deep yellow colour, very much the same shade as that of Duchess of Sutherland, when the latter has been disbudded and grown well. The only variety comparable to Allman's Yellow for late flowering here is Princess Victoria, but for many purposes a yellow flower is more useful than a white one. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

MARKET CHRYSANTHEMUM WINTER CHEER.

We learn that since Mr. W. Hayward, of Kingston-on-Thames, exhibited flowers of this fine late pink-coloured Chrysanthemum at a meeting of the Royal Horticultural Society last month, he has been inundated with applications for stock. Mr. Hayward exhibited the flowers as purchased by him in the market, and presented it not for any award as a new variety, but to show its fine decorative uses so late in the winter. The stock is held by some market-growers, and it is understood they have no present intention to put plants into commerce, being content to find a good market for the flowers. Novelties however come thick and fast, by seed and by sports, hence even a superior variety may soon be on offer.

APPLIANCE TO PREVENT "DRIP."

THE Orchids here having suffered considerable injury from water dripping from the roof, I have recently had beading fixed to the rafters, as shown in the accompanying illustrations (see fig. 39, A, B, C), and this has proved very successful in preventing the causes of the mischief. The use of the beading will save the expense and inconvenience that would be caused by reglazing the roof. The cost of the beading is about 7*s*. 6*d*. for a length of 500 feet. Before fixing the beading put a thick coat of white-lead slightly thinned with linseed-oil on the under surface. Use inch brads, about 6 inches apart. Two coats of paint at least should be given the beading. *F. G. Brewer, The Grange Gardens, Brentwood, Essex.*

PUBLICATIONS RECEIVED.—*The Agricultural Journal of the Cape of Good Hope*, January. Contents: Extra-tropical Forestry, by D. E. Hutchins; Irrigation in the Karoo, &c.—*L'Uiraêry ou Curare*, Extraits et Complément des Notes d'un Naturaliste Brésilien, J. Barbosa Rodrigues (Bruxelles, Imprimerie Veuve Monnom 32, Rue de l'Industrie).—*Les Noces des Palmiers*, Remarques préliminaires sur la fécondation, par J. Barbosa Rodrigues (Bruxelles, Imprimerie Ad. Mertens, Rue d'Or, 14), 1903.—*Plantæ Novæ* vel minus cognitæ ex herbario horti Thenensis (Plantes Nouvelles ou peu connues contenues dans l'herbier de l'Hortus Thenensis), M. Em. de Wildeman. Troisième livraison, Decembre, 1904 (Veuve Monnom, 52, Rue de l'Industrie, Bruxelles).—*Icones Selectæ Horti Thenensis* (Iconographie de Plantes ayant fleuri dans les collections de M. van den Bossche, Ministre résident à Tirlemont, Belgique), avec les descriptions et annotations de M. Em. de Wildeman. Tome V., Fascicules 2 (July) and 3 (October), 1904. (Publishers as above.)—*Myrtacées du Paraguay*, recueillies par Dr. Emile Hassler et determinées par J. Barbosa Rodrigues (Avenue Fonsny 119, Bruxelles), 1903.—*A Blotter and Diary*, from the Anglo-Continental (late Ohlendorffs) Guano Works, 15, Leadenhall Street, London.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cattleya Schilleriana.—This grand Brazilian species commences to grow very early in the year, and under proper conditions produces its flowers in April or May. Newly imported plants should first be fixed in pans of suitable size which have been furnished with a large quantity of drainage material, and over this a thin layer of peat and sphagnum moss should be placed. There may be some plants which, owing to their habit of growth, cannot be fixed in pans, and these may be tied to Teak-wood rafts with a little peat and sphagnum moss intervening. Growth being now in progress, suspend the plants near to the roof-glass in a light, warm spot in the Cattleya-house, affording very limited supplies of water until there is root action. Just previous to the making of new roots fresh surface material may be given. Hybrids from C. Schilleriana should be given more exposure to light than most of their kindred require, and when their pseudo-bulbs are nearing maturity a long period of rest is needed. C. Whitei, C. Vulcan, C. F. W. Wigan, C. Prince Edward, &c., all thrive best suspended near to the roof glass, where light, heat, and air are most abundant.

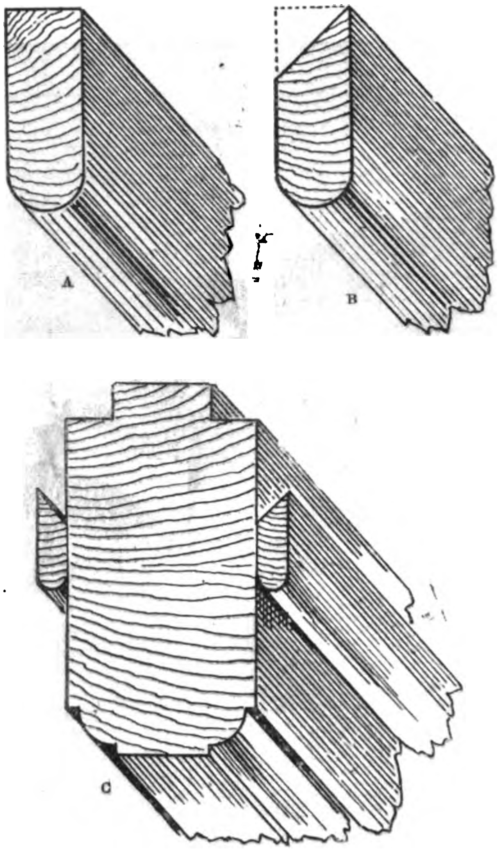


FIG. 39.—APPLIANCE TO PREVENT "DRIP."

A—Three-eighth Beading (*actual size*).
B—Beading bevelled on one side.
C—Rafter showing Beading fixed (*reduced*).

Cattleya Warneri, being another species that makes early growth, should be given a favourable position. On no account should growth be hastened by applying an extra degree of heat, or the plants will not flower well, and further disaster may occur. A central position in the house suits them best, and very little water must be given before new roots appear. Let the plants have perforated pans or baskets and ample drainage material, with a moderate quantity of peat and sphagnum-moss to root into. Repotting or surfacing should be done just when new roots are about to appear.

Odontoglossum citrosmum should be suspended or staged near to the roof-glass in a house having an intermediate temperature, and to ensure a plentiful supply of flowers in season water must be withheld until the youngest pseudo-bulbs show signs of excessive shrivelling. Continue this practice until the flower-spikes appear in the young growths, when freer applications of water may follow. Potting operations should be deferred until after the flowering period, for it is then root-action recommences. A small proportion of semi-decayed Oak-leaves mixed with the peat and sphagnum-moss has proved to be beneficial to this plant, employing pans when such a mixture is used.

Miscellaneous Orchids.—Plants of Platyclinis glumacea have commenced to grow again after a long rest, and should be placed in a light, warm position to induce good growth. Little water is needed until the slender scapes are well advanced in growth, increasing the supply as the leaves develop. Renew the surface materials of those plants not needing a shift. When new roots appear repot those that require it into well-drained pots or pans, using a mixture of equal parts of peat, fibrous loam, and sphagnum moss, with sufficient sand and small crocks to ensure free drainage. Use water in moderation until the plants are re-established, and when fully developed return them to the Cattleya-house in order to mature. Bletia hyacinthina should be placed where it can obtain the maximum amount of light in a cool, airy house, and be gradually watered as the growths elongate. Stenoglottis longifolia is also commencing to grow, and should be placed near the glass in a cool-house. Give the plants little water until the growths are well advanced. When needed divide the stools, and pot the stronger pieces in well-drained pots, using a mixture of soil for potting similar to that advised for the Platyclinis.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Gardenia plants that are well furnished with flower-buds will be benefited by a teaspoonful of Clay's Fertiliser to a gallon of water applied two or three times a week.

Jacobinia chrysostephana.—After a period extending over many weeks in full flower this plant has now ceased to be effective. The seed-vessels should be removed as in the case of those of a Rhododendron to encourage growth. Whether the plants are to be grown on or to be increased by propagation, they should first be given a thorough cleansing with "Quassia-extract," afterwards removing them to a light warm-house, and freely syringing them with clear water. Exercise great care not to allow the plants to become sodden at the roots, or failure will be certain. The wealth of flower and richness of colour produced by this plant during the dull dark days of December and January will amply reward anyone for the trouble taken to bring it to a state of perfection. Cuttings may be taken when young growths have been made, detaching a good heel from the old wood with each cutting. The plants require a warm, moist atmosphere, and the soil should consist of loam and peat in equal parts, with a little charcoal and silver-sand added. Let the rooting space be more or less restricted, afford water with great care, and immerse the plants in "Quassia-extract" regularly not less than once a week.

Justicia coccinea is somewhat different in its habit of growth to Jacobinia chrysostephana, but its requirements are identical with those of that plant. Its rich scarlet flowers have very great effect when grouped amongst other plants.

Achimenes and Tydæas will now be showing signs of active life, and before being allowed to make growth should be shaken out of their old soil and repotted in a good compost of peat and loam in equal parts with a liberal supply of silver-sand added. The pots should be well drained and filled to within 2 inches of the top with the compost, together with a layer of silver-sand, placing the corms evenly but not too thickly over the surface. More of the compost should then be added and pressed lightly with the fingers. They should be placed near to the glass in the plant stove and syringed lightly.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Fruiting Pines.—Plants of the Queen variety which were selected and placed in the fruiting-stove at the commencement of last month for special treatment, as advised in a previous Calendar, will, in the majority of cases, give indications of fruiting during this month. At this stage the temperature at night should be increased to 70°, at the same time weak guano-water at a temperature of 85° should be applied in order to feed and stimulate the plants. Keep the atmosphere somewhat drier during the period the plants are in flower; the presence of too much moisture often causes deformed fruits. When the plants have passed the flowering stage maintain plenty of atmospheric moisture in the house, which can be obtained by damping the paths and beds several times daily, at the same time avoid syringing the plants overhead at this early season. See that the evaporating pans are kept filled with water; and put a handful of guano in these occasionally. In cold weather, when much fire-heat is necessary, the beds which are supplied with bottom-heat must be carefully watched to see that the temperature does not exceed 90°.

Figs.—Pot-trees that have been subjected to a steady bottom-heat of 75° to 80° will in many cases have fully developed their foliage, and their embryo fruits should be swelling freely. Syringe the trees plentifully on bright days, but on cold dull days unfavourable to ventilation, damping the paths and other available spaces will be sufficient. Remove all superfluous fruits before their flowers open, as by this means the dropping of fruits is reduced to a minimum. It is a great mistake to allow more fruits to remain on the trees than they can properly mature. The growths of pot trees should be pinched at the fifth leaf to guard against overcrowding. Trees that are planted in the borders should as far as possible be grown on the extension system and the superfluous wood removed in the winter. Very little growth will take place while the trees are in flower. As soon as the fruits commence to swell, the night temperature should be increased to 65° or 68°, allowing a day temperature of 85° or more with sun-heat, with plenty of atmospheric moisture. Liberal supplies of liquid and of artificial manures should be given to trees growing in pots and shallow borders Houses for later crops should be closed as required. Trees growing in cold-houses should be pruned and cleaned, and the borders top-dressed with good loam, bone-meal, and wood-ashes or lime-rubble.

Grape-room.—The bunches must be examined weekly to remove decayed berries. Refill any bottles with soft water if the water has decreased, for during the first fortnight much water is taken up by the wood. Keep the room darkened, and at a temperature of 40° or 45°. The floor should be kept dry, and sufficient air allowed to ensure the atmosphere being dry and sweet.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Damsons and Bullaces succeed well as pyramids, and will grow in a much poorer soil than most fruit-trees. They require little pruning, it being only necessary to shorten the leading shoots and to remove all useless wood. Trees of this description will often succeed in a cold and damp part of the garden; they may also be successfully used as wind breaks.

Old Orchard-trees in a neglected state may be induced with care and attention to carry satisfactory crops. Old, dead, and decaying wood must be removed, and the branches judiciously thinned. Where much of this work has to be performed, it may be executed from the ground, where the operator has a much better idea of what is necessary. The Standard and Giant Tree Pruners are admirably adapted for this purpose; an aërial saw attached to the former is easily workable. A long-handled pruning chisel is also useful; this is driven upwards with a mallet, and the cuts made by it do not require trimming, as do those made by a saw.

The Destruction of Insect Pests.—Immediately the pruning of fruit-trees has been completed, all the prunings should be carefully raked up and removed with the loose surface soil to the fire heap. The trees should be cleansed with a solution containing caustic soda and crude potash, prepared as follows:—Dissolve 1 lb. of potash and 1 lb. of soda by warm rain-water in separate wooden or earthenware vessels; on no account should metal vessels be used. When each substance has become thoroughly dissolved mix them together, adding water up to 10 gallons, when the wash will be ready for use. All the trees here have been sprayed once, and many will be done again. The work can be carried out expeditiously by using a Vermorel's Knapsack Sprayer, applying the wash at a temperature of 150° Fahr. Choose a day for applying the liquid when there is no wind, and do not let the mixture touch the clothes. A few of the earlier varieties of Pears and Apricots may, if not already done, be left until the autumn. A non-poisonous concentrated alkali preparation can be purchased which is very effectual. The Mussel-scale is a persistent pest, and will attack the fruit later if not destroyed. Two applications are necessary thoroughly to cleanse these from the bark.

Mosses and Lichen.—Where trees are infested by these growths, in which many destructive insects hibernate, scrape off the moss or lichen from the bark and burn them, spraying the trees afterwards with the caustic preparation. Poorness of soil and stagnant water, as well as a moisture-laden atmosphere favour the growth of these plants. Dig a hole 3 feet deep near to or between the trees, and if this should fill or partially fill with water, means must be taken to drain the land. If no water appears, afford the trees a dressing of manure, or remove the soil down to and from around the roots, and replace it by other soils rich in organic matter.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Seed Sowing.—The following seeds may now be sown in moderate heat: Centaurea candidissima, East Lothian Stocks, Cobœa scandens, Michaelmas Daisies, Cannas, and Verbena venosa. Seeds of the two latter species should be soaked for twenty-four hours in water before sowing. Delphiniums usually flower early in the summer, but if treated as annuals by sowing seeds early and pricking the seedlings out into cold frames, subsequently planting, they will make a good show in late summer. If seeds of Eucalyptus Globulus and Grevillea robusta are sown now, and the plants potted on, they will be of a useful size by the month of June.

Plants in Frames.—When mild weather prevails ventilate freely all frames containing Violas, Calceolarias, herbaceous plants, &c. Remove decayed leaves, and stir the surface soil. If it is desired to increase the stock of Calceolarias, the tops can now be taken off, and if they are inserted in sandy soil they will make roots.

Auriculas, Daisies, Carnations, and other plants that were planted last autumn may have been loosened by the frosts, and will require to be made firm again.

Wild Garden.—Hydrangea paniculata grandiflora succeeds well here on a steep bank with south-west aspect in well-cultivated loam. The plants should be pruned now by cutting out all weak growths and by shortening last year's shoots to 2 or 3 buds, which will cause the inflorescences to be of large size. Carefully top-dress the plants with animal manure and soil. Chemical manure can be applied later.

Purple-leaved Shrubs.—The Japanese Maple, Acer palmatum atropurpureum, is the most effective of purple-leaved shrubs. It requires liberal treatment in a sunny sheltered position. There are many more good varieties. Amygdalus purpurea requires to be given a good position, but Berberis vulgaris atropurpurea is less particular. Prunus Pissardi thrives in most positions and soils, and can be pruned to keep it within bounds, or for providing branches for indoor decoration. Quercus pedunculata purpurea is good, and for open spaces Fagus sylvatica purpurea, Acer platanoides Schwedleri and the purple Sycamore are excellent.

Trees and Shrubs with Silvery or Grey Foliage.—Amongst deciduous sorts, the Silver Birch, Salix regalis, Populus argentea, Acer Negundo var., make conspicuous objects in the distance; and for a foreground, Cerasus Mahaleb var., Cornus sanguinea var., Weigela var., are all good. Amongst evergreens, Retinospora squarrosa and R. pisifera sulphurea are beautiful; and the dwarf-growing Euonymus radicans var., Rhamnus alaternus var., Vincas, Eleagnus macrophylla, Osmanthus ilicifolius var., Veronica Andersoni var. (tender), are interesting. The sub-evergreen Atriplex halimus is suitable for sandy places.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Cabbage.—To keep up a supply of this vegetable during the summer months seeds should now be sown in a warm pit or frame, and as soon as the seedlings are large enough to handle they should be pricked-off in some light soil and placed in a similar structure near to the glass, and allowed plenty of light and air, in order to keep the plants sturdy. They will be suitable for succeeding the plants sown in August for spring and early summer use. Two good varieties of Cabbage for present sowing are Ellam's Early and Carter's Model.

Carrots for the General Crop. — Beautiful in shape, colour, and quality are Veitch's Scarlet Model of the stump-rooted type, and Sutton's Red Intermediate. Last season, Carter's Blood Red, quite a new colour, produced long, handsome roots of fine quality.

Beetroot. — Sutton's Blood Red and Carter's Perfection are of perfect table quality; Carter's Crimson Ball is valuable for early use.

Shallots and Garlic.—Embrace the first opportunity of planting these bulbs on ground prepared as for Onions. They should be planted in drills drawn from 9 to 12 inches apart, allowing from 4 to 6 inches between the plants in the rows. Plant the bulb just below the surface. The variety Large Jersey Shallot will be found the best for general purposes.

Parsnips.—In the event of mild weather these roots would soon show signs of growth if left in the ground. They should therefore be lifted with care and stored behind a north wall, putting sufficient fine soil between each layer of roots to exclude light. Sutton's Tender-and-True may be relied upon for good appearance and quality.

Turnips.—To maintain a supply of young and tender roots sow seeds thinly on gentle hot-beds, selecting the variety Carter's Early Long Forcing. If the seeds are sown in drills some seeds of the French Breakfast Radish may be sown between the rows. The Turnips will be fit for use in from ten to twelve weeks from the time of sowing. The variety used here for the general supply is Snowball. From seeds of this variety which were sown in the first week in September we have been pulling and will continue for some time to use roots in quantity and of excellent quality.

Stachys tuberifera (Chinese Artichoke).—This tuber naturally makes early growth of a very brittle nature. It is therefore necessary to plant early, because of the difficulty when allowed to start first of handling the tubers without breaking the growths. Plant the tubers at a depth of 4 or 5 inches, allowing 15 inches between the sets, and 20 inches between the rows.

Mint.—The demand for Mint will now increase. Place sufficient roots in a temperature of 55° to 60°. Make new beds also on well-prepared ground, and if the soil is of a light and porous nature the plants will succeed best.

Thyme. — Where the supply is limited, plants lifted and placed in the temperature as advised for Mint will produce growths, which, if inserted as cuttings, will soon make roots. When the plants have been hardened off, plant them in beds.

Sweet Basil.—Make successional sowings in a temperature of 55° to 60°, according to the demand, in well-drained boxes, covering the seeds lightly.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* EDITOR, 41, Wellington Street, Covent Garden, London. *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	FEB. 13	British Gardeners' Association, Meeting at Birmingham.
TUESDAY,	FEB. 14	Royal Horticultural Society's Committees Meet, also Annual Meeting of Fellows.
THURSDAY,	FEB. 16	—Linnean Society Meeting.

SALES FOR THE WEEK.

MONDAY, FEBRUARY 13—
Roses, Greenhouse Plants, Gladioli, Spiræas, &c., at Protheroe & Morris' Rooms, 67 and 68, Cheapside, E.C., at 12.

WEDNESDAY, FEBRUARY 15—
Azaleas, Gloxinias, Fruit Trees, Japanese Lilies, &c., at Protheroe & Morris' Rooms, at 12.

FRIDAY, FEBRUARY 17—
Hardy Border Plants, Shrubs, Roses, Gladioli, &c., at Protheroe & Morris' Rooms, at 12.—Imported and Established Orchids, at Protheroe & Morris' Rooms, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —39·1°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, February* 8 (6 P.M.): Max. 48°; Min. 42°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 9 (10 A.M.): Bar., 30·4; Temp., 48°. Weather—dull.

PROVINCES.—*Wednesday, Feb.* 8 (6 P.M.): Max. 50°, S.W. Coast of Ireland; Min. 45°, E. Coast of Ireland.

The Thames Embankment Gardens.

WE have often had occasion to remark that these gardens undergo small transformations in the matter of flower-beds, edgings, the arrangements as regards isolated trees and shrubs, and of the foregrounds of shrubberries.

It will be conceded by any person capable of forming a just opinion on such matters that these alterations have rarely been satisfactory. The original design was itself feeble and inappropriate, and the outlines of the shrubberies meaningless, while the arrangement of the beds round the bandstand near Charing Cross, where people most do congregate, affords an excellent example of how not to do it. The none too spacious grass plots have quite lately been made smaller by the introduction of numbers of small beds of puerile forms, and by the planting of isolated trees, destructive of all dignity and breadth of treatment, and making "spotty" effects which are very unsatisfactory.

What seems to be required is the masking of the actual size and form of the ground by a large central mass of choice, deciduous and evergreen shrubs and trees of low stature, the shrubs consisting of specimens of from 4 to 10 feet in height when planted, and not of small nursery stock as we have seen planted at conspicuous angles of the shrubbery lines this winter, which must take many years ere they form handsome objects. Many such fine shrubs as also trees might be grown in the extensive parks of Battersea and Victoria, or in special reserves elsewhere, thus lessening the cost to the ratepayer.

The treatment of the flowering shrubs as regards their pruning also leaves much to be desired, it being an exceedingly rare thing to find any that are furnished with bloom, although even in the murky climate of London it is not impossible to secure the ripening of the wood and the formation of flower-buds. Why should we not have groups of Cerasus pseudo-Cerasus Watereri, which bears a profusion of delicately white flowers, and C. p.-C. James H. Veitch, which is equally floriferous, and the type form; Hydrangea paniculata and H. p. grandiflora; Deutzias in variety, the finer varieties of Lilac, also the Persian variety, a capital bloomer not growing over-tall; Philadelphus in variety, including the beautiful coronarius, P. Lemoinei Boule d'Argent, and P. Avalanche?

Besides these we may mention the following among many desirable plants that are worth a trial, though doubtless all would not succeed:—Mahonia, Buddleia globosa, B. Lindleyana and B. variabilis, Calycanthus, Ceanothus, Choisya ternata, Cratægus, Cydonia (many varieties), Forsythias, Fuchsia Riccartoni, Magnolia Soulangeana, M. Lenné, M. stellata, Photinias, Rubus, Viburnum Opulus, V. plicatum (these are obtainable at cheap prices, and soon grow into good dimensions, and most of them succeed in ordinary soil), the Honeysuckles, both climbing and shrubby, the Clematis of the coccinea hybrid strains, and C. Jackmani, and other garden hybrids, herbaceous and tree Pæonies. Indeed the number of species ready to the hand of the planter is so great that we could not find space in an article of this kind to give the reader a tithe of them, and some at least would survive the smoky atmosphere and other untoward conditions.

The Bamboos of a hardy nature might be employed to give diversity to the aspect of the gardens; and the best of these for the purpose are Arundinaria japonica (Metake of gardens), already in use, A. nitida, A. Simoni (one of the tallest), A. S. var. stricta, Phyllostachys aurea with stems 12 feet in height (a very graceful species), P. Boryana, P. nigra (a species of striking appearance), and a few others.

The present shrubberies are so arranged and planted as to admit of a foreground of flowering plants, a method that seems to be overdone, leaves much of the soil bare during the winter, and is costly, as it means the purchase of great numbers of Dutch bulbs and the providing of summer bedding plants. Much of this labour and outlay might be avoided, and a clothing of the soil afforded at all seasons by the employment of small shrubs in lieu of summer-flowering plants. Such permanent occupants might consist of Berberis Darwini, B. Thunbergi, B. stenophylla, Cotoneaster microphylla, and C. Simonsii; Cydonia japonica, Gaultheria Shallon, G. procumbens, Pernettya mucronata in variety, Skimmia japonica, Hypericum in dwarf varieties, double-flowered Furze, Vinca major and V. minor in variegated varieties, and Euonymus radicans. If peat could be obtained, many American plants could be grown to give additional interest to the garden. It may be said that these plants could not adapt themselves to the distressful conditions, and this, indeed, may be true of some, but not of all.

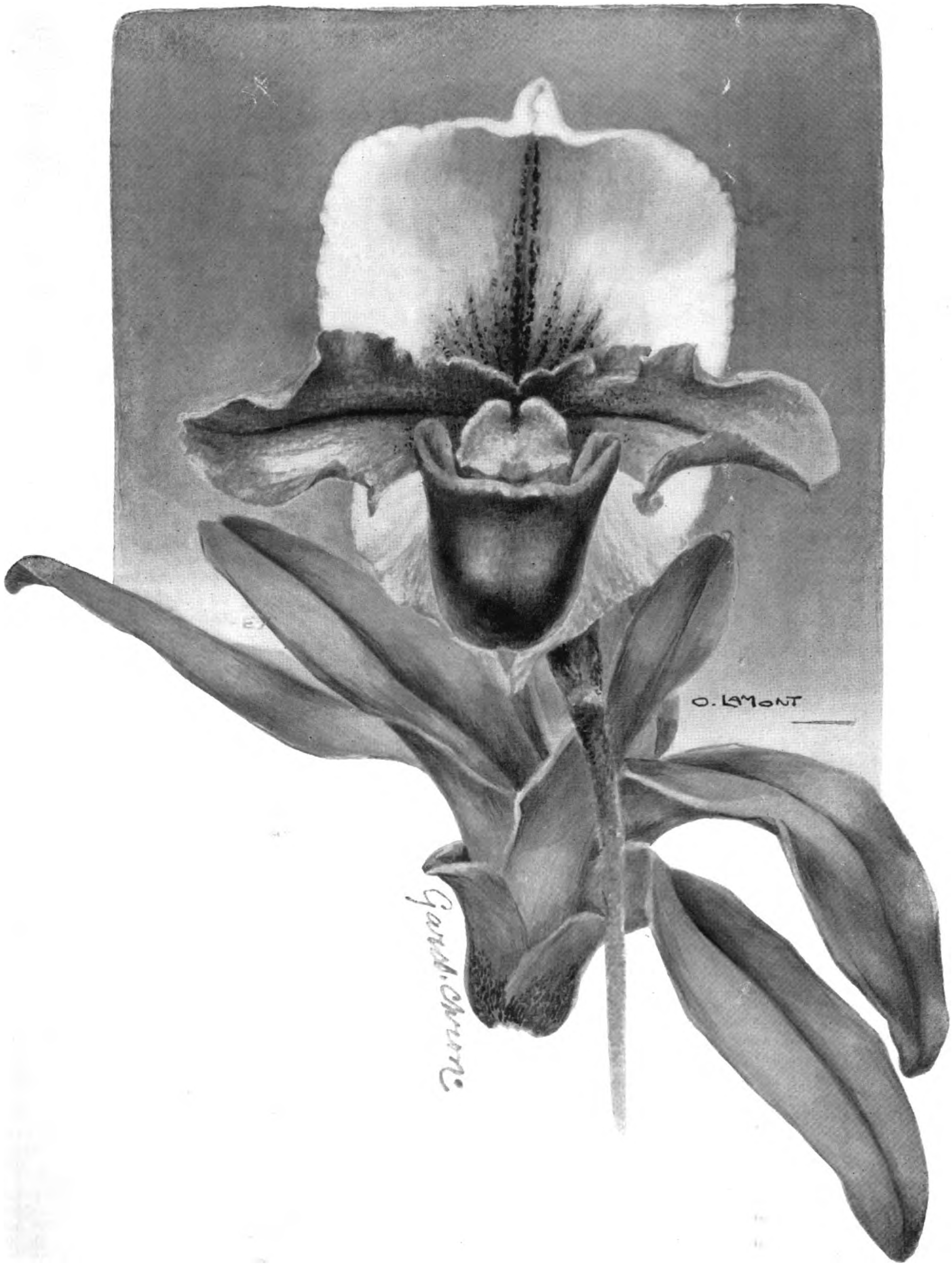
The designer of the garden could never have intended to plant Poplar-trees round the boundaries, to remain till they died of disease or old age, but simply to give it a somewhat furnished appearance till such time as better things attained a good height. Now these trees overtop the rest, and have become anything but ornamental, besides shading the garden unduly on the embankment side, and when in leaf robbing the soil of moisture and nutriment. Their place in every case should be occupied by choicer trees, say Pavias, Maples in variety, Ailanthus glandulosus, Amelanchier canadensis, the common Birch and several varieties, Carpinus in variety, Catalpa bignonioides, Gleditschia sinensis and G. triacanthos, Juglans nigra (American Walnut—a handsome, quick-growing species, suitable if planted on the north and west sides), Pyrus Aucuparia (Mountain Ash), P. Sorbus, and P. torminalis, Ginkgo biloba (a good town tree), and Alnus cordata. Forest trees ought to find no place in the garden owing to the lack of space and the injury they would cause to the adjacent shrubs.

The westernmost garden does not admit of much improvement excepting in the choice of the plants with which it is furnished in the spring and summer seasons. Flowering deciduous shrubs and quite low-growing trees might give it distinction where now it has none, and a fountain and water-basin with Water-Lilies would be better than the exaggerated sarcophagus-like bed now occupying the central position.

When we think of the beauties of the Park Monçeau, the Luxembourg, and even of the Tuileries garden in the centre of Paris, it makes us blush for the shortcomings of the gardens of the metropolis, and wish for something much better and more satisfying. The latest horror at Charing Cross consists of a number of scrolls (we were about to write scrawls) cut in the not-too-abundant turf, and planted with Ivy pegged down to to the soil.

CYPRIPEDIUM × LEEANUM "J. GURNEY FOWLER" (see Supplementary Illustration).—The surprises which await the patient hybridist even when flowering a fresh batch of a hybrid previously well known, gives zest to the pursuit, and go far to account for the enthusiasm with which it is followed by all who have seriously taken it up. Cypripedium × Leeanum was one of the earliest of the showy hybrid Orchids, and the original batch of seedlings displayed great variation, the range of which has been much extended by more recently raised batches, in which the best forms of Cypripedium insigne and C. Spicerianum have been used. At the Royal Horticultural Society's meeting on January 24, Messrs. SANDER & SONS, St. Albans, exhibited Cypripedium × Leeanum "J. Gurney Fowler," for which a First-class Certificate was awarded, the variety being considered by far the best of its class yet shown. Our Supplementary Illustration was prepared from the plant then exhibited. The flower, which is of a very thick substance, has the dorsal sepal pure white with a small greenish base, from which ascends a dotted line of purple up the middle, with shorter purple lines on each side. The ground colour of the petals and lip is yellowish-white, suffused over the greater part of the surface with purple, the petals having a sulphur-white margin.

MIDLAND CARNATION AND PICOTEE SOCIETY.—At the recent Annual Meeting of this Society, Mr. THOS. HUMPHREYS, Curator of the Edgbaston Botanical Gardens, Birmingham, was elected Hon. Secretary and Treasurer.



CYPRIPEDIUM × LEEANUM VAR. J. GURNEY FOWLER, WHICH OBTAINED A FIRST-CLASS CERTIFICATE FROM THE ROYAL HORTICULTURAL SOCIETY ON JANUARY 24, WHEN SHOWN BY MESSRS. SANDER & SONS. SEPALS PORCELAIN-WHITE, UPPER ONE WITH PURPLE STRIPES; PETALS AND LIP CREAMY-WHITE FLUSHED WITH PURPLE.

ROYAL HORTICULTURAL SOCIETY. — The next meeting will be held on Tuesday, Feb. 14, and the one hundred and first annual meeting of the Fellows of the Society will be held during the afternoon of the same day. The Report of the Council for 1904 will be presented, and the President, the Vice-President, the Treasurer, and the Secretary will be elected for the ensuing year, together with three members of the Council.

—— Exhibitors are reminded that the shows in the Royal Horticultural Hall will close at 5 P.M. in future during the months of January, February, November and December, and at 6 P.M. in the rest of the year. This regulation, which is recorded in the new Arrangements for 1905 just issued, will come into force at the next show, February 14. The Council have just arranged to hold a summer Show in the grounds of Chelsea Hospital on July 11, 12 and 13, 1905. The Schedule for this Show and for the autumn Rose, Fruit and Vegetable Shows will be issued in about six weeks' time.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the Lecture Hall of the Institution on Monday, February 13, when the discussion will be resumed on the papers by Mr. A. R. Stenning (Fellow) and Mr. William Menzies (Fellow), read at the meeting of January 16, entitled respectively "Urban and Rural By-Laws and suggested Amendments," and "Building By-Laws in Rural Districts."

LINNEAN SOCIETY OF LONDON.—At the meeting on Thursday, February 16, 1905, at 8 P.M., the following papers will be read:—1. "A Revised Classification of Roses," by Mr. J. G. Baker, F.R.S., F.L.S. 2. "The Botany of the Anglo-German Uganda Boundary Commission," by Messrs. E. G. Baker, Spencer Moore, and Dr. A. B. Rendle.

LIÈGE.—In connection with the great exhibition in Liège this year there will be held three special horticultural shows. The first is to be devoted to flowers, from May 7 to 10; the second to Roses, from June 25 to 27; and the third to market gardening and fruit culture, from October 20 to 23.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. Harry J. Veitch, the Treasurer of the Gardeners' Royal Benevolent Institution, desires us to acknowledge, on his behalf, with thanks the receipt of an anonymous donation of £1 from Leeds in aid of the funds.

"THE SWEET PEA ANNUAL."—This is the official publication of the National Sweet Pea Society, and is edited by Messrs. Horace Wright and C. H. Curtis. A society with more than a quarter of a hundred vice-presidents and as many members of the Executive Committee ought to possess a considerable dynamic force. The pages before us do indeed give evidence of much industry. The tables show which varieties are most favoured by exhibitors; thus, out of 107 varieties and out of 1,561 bunches shown in 1904, "Miss Willmott" was exhibited on sixty-five occasions, Black Knight and Dorothy Eckford almost as frequently, and so on through a gradually diminishing series till we come to the last twenty, which comprise varieties only shown once. A similar list gives statistical details relating to the number of times a "1st prize" was awarded. In this list Dorothy Eckford is placed first, followed by Black Knight, Jeanie Gordon, Lady Grizel Hamilton, and Miss Willmott. A very useful enumeration of the varieties according to colour is given. It must be remembered that these figures refer exclusively to the results as seen at exhibitions. Even more desirable would be an audit compiled from gardens in various localities and showing what are the best varieties to be grown for general rather than exhibition purposes, and giving wherever possible the reasons for such selection. It is noteworthy that all our variations of Sweet Peas are derived from one annual species, a native of Sicily, for the record of the Ceylon habitat no doubt originated in error. The range of variation is therefore the more interesting in that it has not been up to the present affected by hybridisation, and thus shows what an amount of diversity may be obtained from a pure species. It is noteworthy also that while "seed-sports" are common, true sports or bud-variations have not, so far as we know, been produced. True sports indeed appear never to be produced on annual plants, *e.g.*, the China Aster. In the present annual Mr. Percy Waterer gives some interesting details as to his method of crossing and the results he has obtained. Such investigations are of great value in reference to the Mendelian theory of inheritance, and will, we hope, be strenuously pursued as being of greater intrinsic value than mere exhibiting or prize-winning. There are a number of cultural articles, and others devoted to the decorative uses of the Sweet Pea, so that the devotees of this attractive flower are well provided for. We venture to think they will be better pleased if in another "Annual" the advertisements be confined to their legitimate place, and not be suffered to intrude in the text. As the Society depends for its income on the annual subscriptions rather than on advertisements there is the less excuse for this "out-of-place" arrangement.

FROST IN TUNIS.—According to the *Revue Horticole*, the frost on the south side of the Mediterranean from January 1 to 4 was as destructive as on the north side. Caladiums, Hibiscus, Tecomas suffered severely; Araucaria excelsa, Ficus elastica, and others were destroyed. The Aleppo Pine, the Date Palm, and some other Palms have not suffered. At Nice, where 9° to 10° below zero of Centigrade were experienced, the Carnations were ruined. Roses from Marseilles to Genoa are completely destroyed; so are the Marguerites. Indeed, many of the small cultivators are completely ruined. So unusual are such conditions that the growers had neglected the precautions which, if adopted, would have very materially prevented the disasters.

FRUTICETUM VILMORINIANUM.—Under this title M. Maurice de Vilmorin has, with the co-operation of M. Bois, prepared a catalogue of the shrubby and arborescent plants in the Arboretum formed at Les Barres by the first-named botanist. The list is a very full one as it comprises the names of certain species not yet in cultivation at Les Barres. It is enriched with notes and illustrations, which will be greatly appreciated by students. The collection is very rich in Chinese species, for the elaboration of which M. de Vilmorin had the assistance of the late M. Franchet. The plants are arranged according to their natural orders, but in addition a very full alphabetical index is supplied. The value of such a catalogue becomes more and more apparent with use, but the care with which it has been compiled is obvious at a first glance.

POST OFFICE VAGARIES.—In these days of perplexity and conflicting statements as to the condition and future prospects of the commerce of the country, and as to the desirability of securing preferential treatment from our colonies, it is interesting to see the views taken by our Australian colonies as represented by their postal authorities. The following extract is taken from the Post Office daily list for Monday, January 23, published by authority of His Majesty's Postmaster-General:— "'Australia.'—Exceptional treatment of printed matter, catalogues, price-lists, and other advertising matter are subject to Customs Duty at the rate of 3*d*. per lb. Single copies are chargeable." To commercial men this regulation must be extremely objectionable; but if some such tax could be levied here on the hosts of circulars which reach us, unasked for and undesired, we think the Chancellor of the Exchequer might benefit, whilst certainly the annoyance to individuals would be abated.

EUGENIA UGNI.—Messrs. Veitch favour us with fruits of Eugenia Ugni gathered from plants in the open-air against a wall in their Combe Wood nursery. The plant fruits commonly in a a greenhouse temperature, and fifty years ago it was the subject of much attention. Messrs. Veitch in 1854 obtained a Silver Banksian Medal for it, and in 1857 the late Sir Wentworth Dilke offered a prize for it at the great horticultural show held in that year. The fruit is pleasantly aromatic in flavour but it has never won a permanent place in public estimation.

"BOTANICAL MAGAZINE."—The February number contains coloured illustrations of the following plants:—

Yucca guatemalensis, Baker, t. 7997.—An old inhabitant of the Royal Gardens, Kew, and one of the handsomest of the genus, but it is not quite hardy. It is distinguishable in the section to which it belongs by the leaves, which are minutely denticulate, not filiferous. Its identity is not yet fully established, for it has no fewer than six synonyms. In any case it is a noble plant when in bloom, and when out of bloom its appearance is striking. The description is from the pen of Mr. Hemsley.

Tulipa linifolia, Regel, t. 7998.—A species from Turkestan, flowering at Kew in May. The dwarf habit and brilliant crimson flowers render this plant attractive for cultural purposes. It is allied to T. montana, from which it differs, according to Mr. C. H. Wright, who furnishes the description, in the segments of the perianth being equal, and not narrowed at the apex.

Angelonia integerrima, Sprengel, t. 7999.—An under-shrub, described by Mr. F. A. Skan as having sessile, lanceolate, glabrous leaves and lavender-coloured corollas, like those of a Pentstemon, and thickly spotted with purplish dots. It is a native of Brazil and Paraguay. It requires greenhouse treatment.

Bulbophyllum crenulatum, Rolfe, sp. nov., t. 8000. A species distinguished by its club-shaped inflorescence, crenulate lateral sepals, and ovary with six crenulate wings. The four-sided, two-leaved pseudo-bulbs are produced at intervals on a creeping scaly root-stock. The scaly flower-stalk proceeds from the base of a pseudo-bulb, and is terminated by a recurved, densely many-flowered spike of minute purplish flowers. It is a native of Madagascar, and flowered at Glasnevin.

Gnidia polystachya, Bergius, t. 8001.—A pretty greenhouse shrub from S. Africa. The foliage is minute, densely crowded, leaves linear; flowers small, yellow, in dense heads at the tips of the branches. It belongs to the Daphne family (Thymelaceæ). Described by Mr. N. E. Brown from a specimen derived from the Cambridge Botanic Garden.

HOOKER'S "ICONES PLANTARUM." — This publication, which is edited for the Bentham Trustees by Sir William T. Thiselton-Dyer, is chiefly devoted to the description and illustration of new and rare plants selected from the Kew Herbarium. The last issued part (January) contains twenty-five uncoloured illustrations mostly of plants of botanical interest, among them notes on a valuable set of plants collected in Western Australia by Mr. G. H. Thiselton-Dyer, the son of the Director of Kew. A good figure of the Chinese Tulip Tree is given (see Hemsley in *Gardeners' Chronicle*, November 28, 1903, p. 370), and several of the plants figured appear worthy the attention of plant-importers.

AFFORESTATION.—Mr. John F. Mahler, owner of Penissa, Bronygarth, North Wales, has presented to the Denbighshire County Council 50 acres of land for the purpose of demonstrating sound principles of timber planting, and the excellent financial results obtainable therefrom. It is Mr. Mahler's desire that the Council should without delay give practical effect to one of the most important recommendations of the Forestry Committee of the Board of Agriculture. He does not wish to fetter the Council by attaching conditions to the gift, beyond stipulating that the land shall be for ever devoted to the illustration of practical forestry. *Daily Graphic.*

JASMINUM NUDIFLORUM.—A correspondent of *Nature* enquires how it is that the flowers of this winter-flowering shrub get fertilised. From the construction of the flower it would appear to need the assistance of insects; but at the time of flowering there are no insects about. We are tempted to ask whether in this country fertilisation, apart from mere pollination, does take place. Has anyone seen in this country ripe fruits of this species? For ourselves, we cannot recall having seen the fruits more than once or twice.

"ONE-AND-ALL GARDENING."—This cheap and popular publication issues with the present year its tenth annual volume. It contains articles by the Editor (Mr. E. O. Greening), by the late D. T. Fish and Mr. D. S. Fish, and various other gardening authorities. Its contents are useful and practical, but not unmixed with lighter reading, as, for instance, in the paper by Mr. James Scott on "Scenes from Fairyland," where a popular account, with pictures, is given of scenes in the life of an ant, a red-spider, and other minute creatures, studied by the aid of a microscope. The other pages are also illustrated. The Annual may be had from the Agricultural and Horticultural Association, Ltd., 92, Long Acre, W.C.

THE DÜSSELDORF EXHIBITION.—A Silver-gilt medal and diploma have been received from the Committee in recognition of the excellence of the illustrations of Orchids published in the *Gardeners' Chronicle.*

APPLES.—The *Journal of the Board of Agriculture* for January contains an article on Apple-culture by Mr. Goaring, which is worthy the attention of those who possess orchards. The article deals with the site and soil of the orchard, the preparation of the soil, the protection from wind, the selection of the trees, their nature, bush or standard, the methods of planting, pruning, manuring, washing, packing and grading the fruit, and storing. A list of suitable kinds is given, but as it does not state for what special locality the varieties are selected, the list is to that extent incomplete.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

SOME EFFECTS OF THE EARLIER FROSTS AND FOGS.—The earlier frosts seem to have been more than usually severe, accompanied, as some of them were, with densely thick fogs. With me the following plants have suffered injury:—Golden Privet has been divested of all its leaves; Escallonias, whether on walls or open borders, have been killed to the ground; Cotoneaster microphylla, which formed a lovely fringe round the walls of my house, has suffered severely, and will have to be cut hard back; C. Simonsii has lost its leaves, but otherwise is all right; large plants of Berberis Darwini and B. dulcis have been killed to the ground; varieties of Euonymus have also been crippled severely. In the Midland Counties I am afraid we are rather inclined to be prematurely boastful as to the hardiness of some of our exotic introductions, and an occasional lesson in this respect may do us no harm. Once I lived in a little house, the walls of which I had luxuriantly covered over with varieties of the beautiful blue-flowering Ceanothus, but this was far too good to last; there came a frost which killed the whole to the ground. The house was afterwards covered with Wistaria, Pyracantha, and varieties of Ampelopsis. That fogs accompanied by frosts whilst the plants were still full of sap may have had something to do with the destruction of outdoor plants seems to be strengthened by the account given in the *Gardeners' Chronicle* by Mr. Watson (see p. 12) of the mischief wrought amongst the indoor plants at Kew by the thick sulphurous fogs which sometimes hang like a funeral pall over London and its suburban districts. I never happened to be in a London fog, but I am quite willing to believe that it is very much thicker than anything of the kind we have down here. Beyond the difference of the place of origin, there is really no distinction to be drawn between a fog and a cloud; a fog is simply a cloud resting upon the earth; a cloud is a fog floating high in the air. The upper cloud, however, I think we are safe to admit, may be much freer from town contamination than the lower one. In reference to fogs and the dangers and mischiefs resulting therefrom, I am pleased to note that Sir Oliver Lodge, Principal of the University of Birmingham, is now making a study of those disagreeable and hurtful town fogs, and, thinking the subject may be interesting to some of your readers, I herewith quote an extract from the *Birmingham Weekly Post*:—"Fog Dispellers: Quite a host of representative people have, I am told, attended at the Birmingham University in order to see at work the fog dispeller designed by Sir Oliver Lodge. It is not unlikely that in some places the apparatus will be installed for practical public work. I hear that the capital outlay to provide a number of dispellers at various places in Birmingham, sufficient to effectively remove fog, would cost something like £2,000. After that the outlay would, I am assured, be quite nominal." I have taken the liberty and responsibility, on the strength of the above quotation, to send a copy of Mr. Watson's "Effects of Recent Fogs on Plants at Kew" (see *Gardeners' Chronicle*, p. 12) to Sir Oliver Lodge, with the hope that whilst he is meritoriously at work upon a scheme with a view to free towns of smoke and fog, that he may also give consideration as to whether an installation of his "dispellers" might advantageously be fixed at Kew and other similar valuable botanical establishments, and so prevent any further recurrence of the disaster so amply explained by Mr. Watson. *W. Miller, Berkswell.*

ELECTRICITY, PLANTS, AND FOG.—The following letter from Sir Oliver Lodge has been sent to us by Mr. W. Miller, of Berkswell, for publication:—

> *January* 25, 1905.
>
> The question of the effect on plants of a discharge of electricity into the air would be a very interesting subject for investigation, and it would be quite possible to arrange for it, if, as I suppose, the ordinary electric mains are available at Kew; but that the effect would be beneficial to the plants I cannot guarantee—it might be the reverse. It would probably act directly upon the plants as well as upon the fog, and in so far as it acted upon the fog it would have a tendency to deposit it upon the plants, which would certainly be injurious. Irrespective of that, however, the effect of electrified air in a greenhouse or other enclosure ought to be studied, and perhaps someone will have leisure to take it up at some future time.
>
> OLIVER LODGE.
>
> University, Birmingham.

HOW TO TRANSPLANT A MEDIUM-SIZED TREE OR SHRUB.—Assuming that a site has been chosen, a suitable compost prepared (principally leaf-mould), that the soil is in proper workable condition, and a hole has been made that is undoubtedly large enough for the shrub or tree, then put a conspicuous mark on the "best side" of the specimen to be moved, and tie up the branches carefully with soft rope; mark a circle—say 3 feet from bole—and outside this dig a trench, using the spade so that the blade is in a line with diameter of ball. When the trench is a little deeper than the lowest roots; carefully use a fork or pointed stick amongst the roots to reduce the ball to reasonable dimensions. Use a planting handbarrow to carry the specimen to the new site, trim broken roots if necessary, judge the right depth, put in a layer of compost, place the tree in right position, spread out by hand the lowest layer of roots, cover with fine soil, then another layer of roots, make firm by treading, and so on till the operation is finished. If done successfully the tree will appear better than it did before. *W. A. Miller.*

APPLE LANE'S PRINCE ALBERT.—My experience in our heavy soil is that this variety of Apple crops remarkably well, developing fruits of a good size, which keep well till March. Grown as a bush or especially as a half-standard tree, I consider it one of the best kitchen Apples we have. A large fruit-grower for market near here has acres of it planted as half-standards, and he speaks well of it. In consequence of the trees cropping so freely they should be frequently surface-fed with suitable manures. Some years since I experimented with several trees of this variety with regard to manures, and found that those trees receiving an annual dressing of Thomson's Vine-manure lightly forked-in near the surface succeeded infinitely better than any other, both in the amount of crop, in quality of fruit, and in growth. *E. M., Swanmore Park, Hants.*

—— The notes on page 44 from your correspondents supporting Apple Lane's Prince Albert on the one hand and Newton Wonder on the other, are both interesting. I find myself that it is difficult to discriminate between their qualities, as both are excellent croppers; but during the seasons 1902 and 1903, when Apples were scarce, Lane's Prince Albert proved the more reliable variety. Although I feel sure that the variety Newton Wonder will be very largely planted in gardens during the next few years, it is more suitable for growing as standard trees. No votes from Scotland or Wales were given to this Apple at the recent selection, but I have no doubt it will receive more votes at the next election. Lane's Prince Albert always keeps well with me to the end of February or for an even longer period, while Newton Wonder will keep to the end of April or the beginning of May. We have a large standard tree of Newton Wonder at least thirty years old; it would be interesting to know the origin of this variety. *F.J., Droitwich.*

RIGHT OR LEFT HAND DIGGING.—In all my experience in relation to the use of the spade in digging, it has been held that the question of right or left hand was determined by the side of the worker on which the spade was held. If on the right side it was right-handed; if on the left side it was left-handed. It is worthy of note, such at least is my experience again, that 90 per cent. of diggers use the tool on their right-hand side. All the same those who habitually work it on the left hand-side do equally good work. It is all a question of use. It is of far greater importance in digging that the spade be a long one, that its blade be kept as erect as possible, and that the soil be deeply worked. If it be so then is good work done. *D.*

SEED PACKING.—The experience of Kew in the distribution of seeds to all parts of the world may be termed exceptionally successful, and it is often achieved without much trouble. Indeed it is too often the case that seeds received at Kew are rendered worthless by the special methods of preparation and packing adopted by the senders. There are, however, certain kinds of seeds which soon lose their vitality if kept dry, and amongst these are all kinds of Oak-acorns. For the last twenty-five years, at least, consignments of acorns have been sent annually from Kew to South Africa. They used to be packed in beer casks, the acorns being put in through the bung-hole, and the casks filled up with water; but an experiment made about fifteen years ago proved that this method was less successful than that of packing the acorns in a wooden case in layers with moist cocoa-nut fibre between each layer. The report was—"Acorns sent in water a failure, those sent in cocoa-nut fibre have germinated on the way, and we have now 1,200 strong seedlings from them." Last October we had an application for a quantity of acorns of Quercus pedunculata, Q. sessiliflora, and Q. Cerris, for St. Vincent. They were packed in damp cocoa-nut fibre in wooden boxes, beginning with a layer of fibre at the bottom, then a layer of acorns, and so on till the boxes were filled. They were labelled "To be placed in a cool place in the hold." The report just received states that "The acorns of Quercus pedunculata have germinated well; Q. sessiliflora are not quite so forward; and Q. Cerris still less so." I can strongly recommend damp cocoa-nut fibre and wooden boxes for all seeds that perish easily, and that can be conveniently packed in them; for instance, seeds of Para rubber, Ceara rubber, and Brazil nuts. For seeds generally I know of nothing better than paper packets and calico bags, and the more moisture there is in the seeds themselves when thus packed the better. Hermetically sealed tins or bottles should never be used. *W. Watson, Kew.*

EARLY PEACHES.—In the "Fruits under Glass" Calendar, on p. 55, Mr. F. Jordan states that Early Alexander and Hale's Early are especially adaptable for forcing in pots. It would be interesting to know what results Mr. Jordan gets from these varieties. I have found these two varieties utterly unsuitable for early forcing. When they did not drop their buds (and the American varieties are notorious offenders in this respect), they would not swell. The only Peaches I have found that will force are Duchess of Cornwall and Duke of York. This year I have discarded Alexander and Hale's Early; they are useless. Cardinal and Early Rivers Nectarines are admirable for early forcing. They seldom fail to give the best results. I should very much like to see fruit of Alexander and Hale's Early ripe by the beginning of May. *Thos. Tomlinson, Tower House Gardens, Streatham.*

—— In reply to the letter printed above I may state that I have found Alexander the best early Peach we have tried for very early forcing in pots, and have gathered excellent Peaches from this variety at the end of April and beginning of May. Hale's Early is good in all respects, but is ten or twelve days later than Alexander, although similar to that variety in appearance. All the American varieties are liable to cast their buds, but both the varieties mentioned are good growers, which compensates to some extent for this failure. They require a low temperature during the early stages of forcing, and above all they should never be allowed to become dry at the roots at any season of the year. This is often an unsuspected cause of bud-dropping and other failures. I have never found any difficulty in getting the fruits to swell to an average size upon healthy trees. Duke of York and Duchess of Cornwall are, I believe, excellent varieties for very early forcing, and are no doubt all Messrs. Rivers represent them to be, but I have not tried them sufficiently yet to recommend them with any confidence. *F. Jordan, Impney Hall Gardens, Droitwich.*

CORDYLINE INDIVISA.—On page 66 there appeared an illustration purporting to be "Specimens of Cordyline indivisa in Lord Ilchester's garden at Abbotsbury, Dorsetshire." It is very evident that these are not Cordyline indivisa but C. australis, a species very commonly met with along the south-western coast. This is more generally known as Dracæna australis, and a representation of what is probably one of the finest specimens in England, growing at Penjerrick, Cornwall, appeared as a supplementary illustration on May 18, 1901. Cordyline indivisa is very distinct from C. australis, having pale glaucous-green leaves fully 6 inches wide and about 4 feet 6 inches in length, with orange-red midribs. It is a rare plant, but specimens exist at Enys, Trewidden, Menabilly and Trelissick, and also in some Irish gardens. I believe this species to have flowered but once in the British Isles, this having occurred at Tresco Abbey Gardens, Isles of Scilly, in April 1896, when I had the pleasure of seeing and photographing it. It is a very striking foliage plant and is more tender than C. australis, which is quite hardy in the south-west. On January 19, 1901, the supplementary illustration showed a specimen of C. Banksii, growing in Dr. Hamilton Ramsay's garden at Torquay, under the name of Cordyline indivisa. I pointed out at the time that C. indivisa was a very different plant, and I have reason to believe that Dr. Ramsay was eventually satisfied that his plant was C. Banksii. These two instances, however, show how little is generally known of Cordyline indivisa vera. *S. W. Fitzherbert.*

THE APIARY.

Feeding.—If beekeepers are to be successful they must attend to feeding. The months of February, March, and April prove the most disastrous to bees. It is useless to commence stimulative feeding, for a short spell of hard frost would almost mean ruin to bees so fed. Further, the period of comparative rest is with us, and good candy made of honey into which pure cane sugar has been kneaded proves the best of all foods save except honey. Take some good honey and heat it; then work in sufficient sugar to make it of the same consistency as clay is when ready for moulding. Slip this under the quilt and cause as little disturbance as possible.

Covers and Quilts.—Look to the roofs and see that they are not leaky, for damp causes death to bees. One of the best covers is one of tin; but if calico be nailed on the top and then well painted this proves very effective. If the quilts have got damp remove them, or dysentery will result from neglect. Replace with dry quilts, taking care to make them fit at the corner so that no heat can escape from the brood-chamber. A very good quilt may be made of a small bag loosely filled with sawdust or cork-dust, which can often be obtained of any grocer who sells foreign Grapes. *Chloris.*

A VIEW IN THE WINTER GARDEN IN THE STATE BOTANIC GARDEN IN BRUSSELS.

The Botanic Garden at Brussels possesses the most beautiful winter garden in Belgium. It contains some of the rarest and oldest Tree Ferns known on the Continent. Amongst these we may mention:—Cyathea Schauschin, hort., with a trunk 6 m. 80 high; Alsophila phaleolata [?], hort., 5 m. 50; two plants of Cyathea insignis, Eaton, 5 m. 25; C. medullaris, Swarz., 6 m. 70; Dicksonia regalis, Baker, 2 metres high, having twelve fronds, and 1 metre in circumference of the trunk; and D. Schiedei, Baker, 0 m. 80 high, fifteen leaves, and 0 m. 90 in circumference. The house was built in 1878. In its higher part the roof is 60 feet from the ground.

In 1903 the collections were enriched by the valuable gift of Count de Kerchove, of Denterghem, when he distributed the well-known plants he had cultivated in the famous Court winter garden at Ghent. The largest specimen of Angiopteris known is also in the Brussels Botanic Garden. The species is A. evecta var. Teysmanniana. It has eighteen fronds, and some of them are 12 feet long. The spread of fronds is 21 feet across, and the stem 32 inches in diameter. Our illustration (fig 40) shows a bed of various species of Cypripedium in flower planted together at the base of the great mass of Monstera deliciosa, 15 feet high, and measuring 12 feet in diameter.

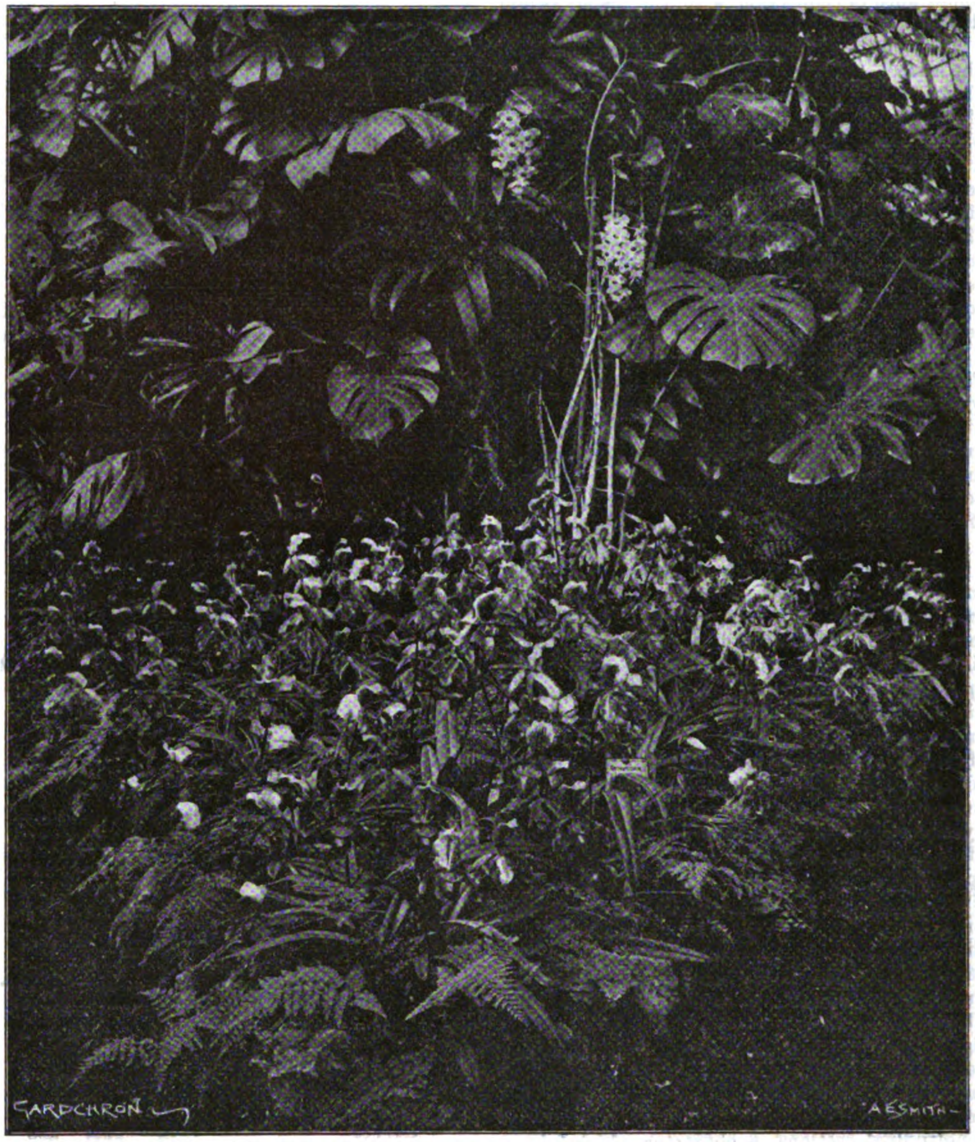


Fig. 40.—View of a corner in the winter garden of the State Botanic Garden, Brussels.

A TOMATO DISEASE NEW TO ENGLAND.

FROM a basket of Tomatos for sale were selected several fruits which showed on them a matlike, velvety growth of irregular size and greenish-brown colour. At first sight the injury appeared as if caused by the well-known parasitic fungus, Cladosporium fulvum, Cooke, and the correct fungus would have undoubtedly escaped detection if a broad, whitish, delicate margin surrounding the dark spots on the fruits (see fig. 41) had not raised my suspicion, as I had never observed this appearance in connection with the Cladosporium disease.

The selected fruits showed various stages of the attack—some were apparently healthy, others showed one or more diseased patches. Some of the fruits were brought to the laboratory and placed under a glass cover, whilst one badly attacked I selected for investigation. The microscopic examination showed that the whitish portions, which caused my suspicion, were formed by the vegetative, hyaline hyphæ or threads of a fungus, which had reached its mature stage in the centre of the spots, where the numerous ripe conidia or spores of the fungus produced the dark colouration of the spots.

The fungus resembled closely a disease of Potatos known in America as "Early blight," which is caused by Macrosporium Solani. The history of this fungus is as yet insufficiently known, as it is said to undergo various changes in its development, representing at times a fungus described as Alternaria Solani by Prof. Sorauer (*Zeitschrift der Pflanzenkrankheiten*, 1896, vol. iii., p. 1). Prof. Sorauer obtained specimens of the "Early blight disease" from America in 1896, conducted a series of interesting experiments, and succeeded in infecting portions of Tomato leaves with it. From the illustration and description given, the fungus now under consideration appears to be the same as that investigated by this distinguished fungologist. However, one difference should be pointed out. The conidiophores of Alternaria are said to be of the same colour (darkish-brown) as the spores of the fungus; in this case the hyphæ and conidiophores were hyaline. That peculiarity would bring the position of the fungus nearer the genus Polydesmus. The spores of the fungus are of various shapes and sizes—long, narrow clubs varying to shorter, broad-based clubs. They are muriform and have distinct thick-walled divisions of varying number (see fig. 42). They are borne in chains on the ends of the colourless conidiophores, but were also found springing from the sides of them (see fig. 42, B). The presence of the longitudinal sections in the spores distinguishes the fungus from Polydesmus, which is said to differ from Alternaria only in the spores having no longitudinal sections, a character which I have never found to exist, and I am consequently of the opinion that the separation of Polydesmus from Alternaria is not justified, and that the two genera are the same, Alternaria being the fungus first described. The difference in the colour of the conidiophores of the fungus here dealt with, and of Alternaria described elsewhere, is not sufficient to induce me to think that it is distinct from the fungus of Professor Sorauer, Alternaria Solani, as they agree in every other respect.

It was interesting to observe the rapid spread of the fungus on the fruits kept under cover in ordinary room-temperature. Within twenty-four hours every fruit was more or less covered with the whitish mycelium, showing that the spores were actively germinating and reproducing the disease. After thirty-six hours the growth had become more dense and its colour had changed to a greenish hue. At this stage the conidiophores bore many, though still immature spores, whilst full maturity was attained forty-eight hours after placing the fruits under cover.

From this observation it will be seen what a pest this fungus may prove to Tomato growers. They must combat the fungus wherever it is noticed, getting in the first instance rid of all infected plants and spraying the remaining ones and the soil with Bordeaux-mixture, which if repeated should effectually prevent the spread of an attack by this fungus into an epidemic.

BACTERIAL DISEASE.

In conclusion I may refer to a bacterial disease which I have observed frequently on Tomato fruits.

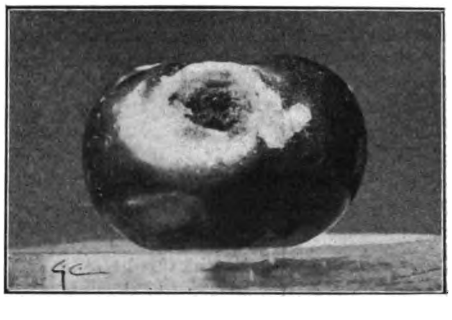


FIG. 41.—DISEASED TOMATO. (*Two-thirds natural size.*)

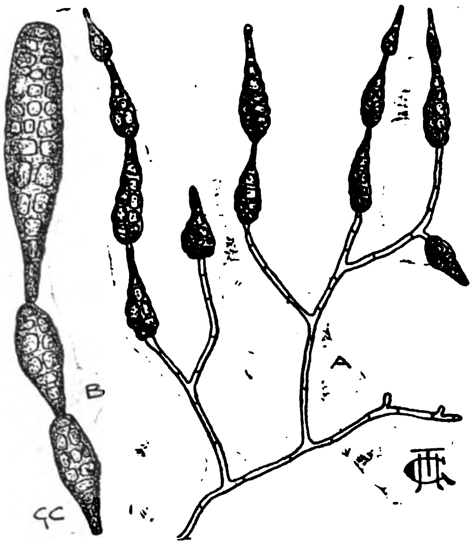


FIG. 42.—ALTERNARIA SOLANI.

A—Fungus magnified 225 ×, showing colourless hyphæ and dark spores borne in chains.
B—Chain of spores enlarged 500 ×, showing the irregular cell divisions.

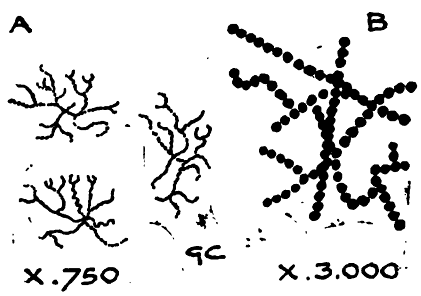


FIG. 43.—BACTERIOSIS OF TOMATO.

A—Groups of Bacteria, enlarged 750 ×.
B—Portion of a group, enlarged 3000 ×.

Bacterial diseases of plants, as for instance gummosis of Cherry-trees and of Cucumbers, &c., are by no means of rare occurrence, but I have not been able to discover any description of a similar attack on Tomatos. I may here remark that at the beginning of this bacterial disease no mycelial fungus growth whatever was present, and I am convinced that in this case the bacteria were the primary cause of the injury. The ripe fruits became attacked, showing roundish patches somewhat paler in colour than the rest of the fruit and slightly depressed. In this stage an attack is difficult to detect, but soon the spots become vitreous, and on touch feel softish and pulpy. At a later stage the epidermis is slightly raised as if an air bubble had developed underneath it, which in my opinion is undoubtedly due to the development of certain gases accompanying the putrefaction of vegetable (and animal) tissues destroyed by bacteria. Soon now the epidermis bursts and a slimy pulp oozes out containing myriads of bacteria, which form small groups of very fine thread-like chains (see fig. 43). Thus the disease appears like gummosis of Cucumbers, and I propose to call it "Bacteriosis of Tomatos" in future.

In this stage mycelial fungi of semi-parasitic nature, like Botrytis, &c., soon make their appearance. As a bacterial disease of this description is, I presume, only visible to a keen observer, and in most cases altogether escapes notice, the true parasitic nature of such secondary mycelial fungi must be doubted or remain at least to be proved by successful inoculation experiments. Nothing has yet been determined as to how best to deal with this malady, but all fruits so attacked must be got rid of. Whether changing the conditions of culture or temperature would have the desired effect must be proved by further experiments.—*Hans Th. Güssow, Upper Norwood.*

LAW NOTE.

PURCHASE OF ORCHIDS FROM ILLUSTRATIONS.

THE Belgian Tribunal of Commerce is at present sitting in judgment on a case which interests Orchid-lovers, and particularly English Orchid-growers, who anxiously await the final decision. An English amateur bought from a firm near Brussels five small plants for 30,000 francs (about £1,200), which were alleged to be rare varieties of Odontoglossum crispum. The plants were not in flower at the time of purchase, and, according to general custom, the contract was made on the strength of certain water-colour drawings purporting to be correct reproductions of the five plants when in flower. In due course the plaintiff found that the flowers of the Orchids he had bought had none of the superior qualities represented by the water-colour drawings, which formed the basis of this contract.

The English amateur, through his counsel (M. Maurice Frison), asked the Tribunal to decree the cancellation of the contract, alleging the non-existence of the rare qualities and the superior points which were asserted to exist by the seller at the time of the purchase. He (the amateur) considers that the Orchids sold to him were not worth a tenth part of the price paid, and alleges that the water-colour drawings which were submitted to him were not truthful reproductions, but merely fancy pictures.

M. Wauwermans, for the defendant, pleaded that the Orchids might have been changed, if not by the plaintiff, at least by one of his staff, and that, under the circumstances, it is impossible to admit a cancellation of a sale regularly entered into by both parties.

We shall publish the judgment in due course.—*Extract from "L'Étoile Belge," January 24, 1905.*

Obituary.

DR. WILHELM SCHWACKE.—The death of this gentleman on December 11, 1904, is announced. He was Professor of Botany at Ouro Preto (Minaes Geraes). He had explored the provinces of Rio Janeiro, St. Catherine, Minaes Geraes, and the valley of the Amazon, and enriched European herbaria with specimens from those regions.

SOCIETIES.

LINNEAN—General Meeting.

January 19.—Prof. W. A. Herdman, F.R.S., President, in the Chair.

Mrs. Catherine Crisp, Mrs. Constance Percy Sladen, Miss Ellen Ann Willmott, Miss Emma Louisa Turner, Mrs. Mary Anne Stebbing, Miss Sarah Marianne Silver, Mrs. Lilian Jane Veley, Miss Margaret Benson, Miss Annie Lorrain Smith, Miss Gulielma Lister, and Miss Ethel Sargant were admitted Fellows. Mr. Thomas Vere Hodgson, and Miss Viola Annette Latham, M.D., were proposed as Fellows. Mr. Eardley Wilmot Blomfield Holt and Miss Emilia Frances Noel were elected Fellows. The Rev. T. R. R. Stebbing exhibited and explained specimens of Crustacea, in various ways remarkable for structure, habits, habitat, or colouring, collected by various naturalists.

Dr. Augustine Henry, F.L.S., gave a discourse on Botanical Collecting. The actual methods were briefly alluded to, stress being laid on truthful labelling of the specimens at the moment of collection, instead of months afterwards, when identical numbers were often given to plants of different *provenance*. With the aid of nearly fifty lantern-slides, he gave illustrations of his travels in China, demonstrating that the popular idea of that country as one vast rice-field was fallacious, as it mainly consisted of mountain ranges cut up by deep valleys. In some of the slides the home of the wild forms of the Chrysanthemum, Primula sinensis, &c., were shown; and the lecturer alluded to the early history of horticulture in China, stating that the first botanical garden there was made 111 B.C. in Shensi, plants from subtropical regions, as the Banana, Areca Palm, and Orange, being introduced. Other slides showed typical forms of subtropical deciduous and evergreen trees; and the occurrence of epiphytes and lianes in vast numbers was mentioned. Referring to the statements in the text-books Dr. Henry said that the assertion that epiphytes of higher types than Ferns do not occur in Europe is too sweeping, as in the moist warm climate of Ireland, in Wicklow Cotyledon Umbilicus covers the trunk and branches of the Alder, while Rhododendrons in two cases were seen by him growing on the bark of Pinus sylvestris; and Pyrus Aucuparia seems to be a true epiphyte in various parts of Scotland and Wales. Dr. Henry alluded to "mimicry" in plants, in the case of two species of Lysimachia (a protomorphic genus in China), one of which mimicked Paris quadrifolia, with four leaves, while the other recalled another species of Paris with ten to twelve leaves. He referred also to the extraordinary richness of species on calcareous soils as compared with other soils, a fact constantly seen in China, and well marked also in France, and asked for some explanation. In China, as elsewhere, pure woods were rare, being only formed by a few Conifers, like Abies Fargesii at high altitudes in Hupeh, Cupressus funebris in the same province at lower levels (the home of the Reeves's Pheasant), Pinus Massoniana (almost everywhere in the central and southern provinces), other species of Pinus more local; also certain species of Oak widely distributed, and Alnus nepalensis in Yunnan. The explanation of the occurrence of pure forests was also a subject not completely understood—e.g., in this country Ash seeded freely, and in some places for a time looked as if it would grow into a pure wood; but apparently pure forests of Ash only occurred on extremely rich soil in some districts in Russia.

With regard to botanical collecting, three stages had occurred. At an early period plants were collected to be merely named and classified; in fact, they were treated like postage stamps. The second period began with Sir Joseph Hooker, who did much to promote and develop the study of the geographical distribution of plants. The third period, that of the present day, was a step forward, in that attention should be paid to the plants themselves as social organisms, living in harmony and yet in competition together; and Dr. Henry urged that the time had come when the hunt for new species should cease to be the sole aim of the collector, and the study of the known species be taken in hand in their living conditions. He advocated map-making of small areas, census-taking, measurements, records of natural seedlings, soil, shade, &c.; and, to illustrate this plan, showed a series of slides taken in France, the idea of which was to explain how the commoner species of trees behaved at different altitudes and on different soils. These slides included Beech, Spruce, Pinus Cembra, Pinus montana (which, according to Dr. Henry, often attains 80 feet in height, and thrives on peat-mosses and on rocky soil so thick with boulders that practically no vegetation existed except this hardy Pine), Larch, Quercus sessiliflora and pedunculata. He pointed out that the two last-mentioned species differed as to soil and situation, and complained that their areas had never been mapped out in England. The causes favouring the existence of the two very different forms of the common Birch were unknown, yet in Scotland this problem could easily be attacked.

The systematic botanists had only asked from collectors specimens with leaves, flowers, and fruit, material to be named and classified; yet in trees and shrubs the winter and the seedling stages were also of extreme interest. Elm seedlings and seedlings showing the difference between the two common Oaks were not to be found in the national herbaria, and are not described in books.

Dr. Henry also referred to the small amount of work that had been done in regard to peat-mosses, and the great importance of studying the ancient forests, of which these mosses were, to put it broadly, the ruins. He mentioned extraordinary growth of trees in deep peat-mosses of the present day, as Alder averaging 95 feet; even the Oak also occurred.

Owing to the small amount of attention that had been paid to scientific forestry in this country, trees had met with scanty recognition from the authors of local floras; and in some cases species (as the Arbutus) were put down as shrubs, though there was plain evidence that they attained the size and fulfilled the functions of forest trees.

February 2.—Prof. W. A. Herdman, F.R.S., President, in the chair.

Mr. Eardley Wilmot Blomfield Holt, Miss Emilia Frances Noel, Miss Alice Laura Embleton, Mr. William James Tutcher, and Mr. Stafford Edwin Chandler were admitted Fellows. Miss Emily Mary Berridge, B.Sc. (Lond.), Mr. Frederick Hugh Capron, B.A. (Oxon.), Miss Helen Charlotte Isabella Fraser, B.Sc. (Lond.), and Miss Dorothea Frances Matilda Pertz were proposed as Fellows. Miss Lilian Suzette Gibbs, Mrs. Henderina Victoria Scott, Mr. Charles Blades Coverdale Storey, and Mr. Richard Henry Yapp, M.A. (Cantab.), were severally balloted for and elected Fellows.

The President having announced that the Council had approached Her Majesty the Queen with the view of obtaining Her Majesty's consent to become an honorary member under the provisions of the Supplemental Charter and new Bye-laws, read the following letter from the Queen's Private Secretary:—

Buckingham Palace, January 27, 1905.

Sir,—I have had the honour of submitting your letter and Reports to the Queen. I am commanded to inform you that Her Majesty will be pleased to comply with your request to become an Honorary Member of the Linnean Society.

(Signed) Sidney Greville.

B. Daydon Jackson, Esq., Gen. Secretary.

The President then read the letter which he proposed to send in consequence of the foregoing:—

To the Queen's Most Excellent Majesty.

Madam,—I have the honour to state that the gracious expression of Your Majesty's wish to become an Honorary Member of this Society was duly communicated to the General Meeting of the Linnean Society of London held yesterday at Burlington House, and was received with acclamation, the Fellows all upstanding in their places.

The Roll of the Society will be submitted for signature at Your Majesty's pleasure.

I remain, Madam, with the deepest respect,
Your Majesty's most dutiful and most obedient Servant,
(Signed) William A. Herdman,
President, Linnean Society of London.

The first paper was by Mr. W. J. Tutcher, F.L.S., entitled "Descriptions of some new Species and Notes on other Chinese Plants." The species in question had been found on the island of Hongkong, with one from Kowloon, and one from Wei-hai-wei. He pointed out that the island lies just within the tropics, about 22° N. and 114° E. from Greenwich; it consists of irregular granite mountain-ridges, the highest peak being Mount Victoria, 1,800 feet. The average rainfall is 85 inches, most of which falls during the S.W. monsoon. The hills are broken up by ravines in which the vegetation is richest, but most of the vegetation which strikes the eye is due to the Afforestation Department, which has planted Pinus Massoniana in large numbers. Bentham's *Flora Hongkongensis* in 1861 enumerated 1,053 species from the island, 159 of which had not at that time been found elsewhese, but at the present time only about 50 of these remain peculiar to the island. The flora as now known amounts to about 1,400 species, of which 100 are regarded as endemic, though probably many will be found natives of the mainland. Botanising is difficult, as the collector has to hack his way through Bamboo and shrubs amongst the boulders. Ferns amount to 100, grasses about as many; Leguminosæ nearly as many; between 70 and 80 Cyperaceæ; Compositæ over 60, and Orchids 60. Quercus Eyrei, first found by Captain Champion, has not been collected by any recent collector till the author refound it in quantity. The luxuriance usually associated with tropical vegetation is here wanting, due to the poverty of the soil, which is almost exclusively disintegrated granite.

The new territory leased to Great Britain in 1898 has an area of about 300 square miles, that is, ten times the area of Hongkong. Lantao is an island resembling Hongkong, but its highest peak is 3,050 feet, with many well-wooded ravines, and when explored will doubtless prove rich in plants.

BRITISH GARDENERS' ASSOCIATION.

On January 28, Dr. Groves, J.P., presided at a meeting of the Isle of Wight Horticultural Association at Warburton's Hotel, Newport, at which Mr. R. Hooper Pearson explained the aims and objects of the Association, with the view to the formation of a branch in the Island.

Mr. Pearson referred to the difficulties which had in former years prevented co-operation among gardeners, and said those difficulties had now largely been removed. Though there had been immense progress in gardening there had been no progress in the direction of the amelioration of the material circumstances of the gardener's life. The Association would help every gardener to take a greater interest in his calling, as it existed for improving the status of horticulture and the gardener. Every member of the Association must be a man who had his profession at heart, prepared to give all the attention possible to make himself efficient, and the executive of the Association, with the confidence of the gardeners of the country, would then be able to exert sufficient moral force and influence to ensure that the status and remuneration of the gardener generally should be improved. The Association would be able to assist in the transfer of young gardeners from one place to another and to help in obtaining employment for gardeners; and the guarantee of efficiency implied by membership of the Association would be beneficial to employers. The Association would impress upon head gardeners the great importance of taking a greater interest in the training of their apprentices, so as to ensure a worthy generation of gardeners to follow them. He pointed to the fact that gardening authorities and large employers of gardeners, including Lord Windsor, nurserymen, and others, were hearty and liberal supporters of the Association, which had also the good wishes of Mr. Chamberlain and the President of the Board of Agriculture, Lord Onslow.

Mr. C. H. Snook, West Hill Gardens, Shanklin, proposed that a branch of the British Gardeners' Association be formed in the Island. This was carried unanimously.

On the proposition of Mr. A. Kime, seconded by Dr. Groves, Mr. Snook was elected secretary of the branch. *Isle of Wight County Press, February* 4, 1905.

—— A meeting in connection with the above Society was held at Wylam-on-Tyne on February 2, members from several local gardeners' societies attending. The meeting was addressed by Mr. W. Hall, Superintendent of Parks, &c., Sunderland, and by some other Sunderland members of the Association, their exposition of the benefits to be derived from co-operation meeting with a very cordial reception.

NATIONAL CHRYSANTHEMUM.

ANNUAL MEETING.

February 6.—The annual General Meeting of the members of this Society was held at Carr's Restaurant, Strand, on the above date, when a moderately large number of supporters assembled. Much satisfaction was evidenced by the company in seeing the Secretary, Mr. R. Dean, present again among them. Although still indisposed, he was sufficiently recovered to take his accustomed place at the proceedings. Much regret was however felt that the President, Mr. Shea, was unable to be present owing to a severe attack of influenza. Mr. T. Bevan was thereupon unanimously voted to the chair. The Annual Report was submitted to the Fellows, from which we extract the following paragraphs:—

Extracts from the Report of the Executive Committee.

"Three exhibitions were held at the Crystal Palace in 1904. At the October show the classes for early Chrysanthemums did not fill so well as could be desired. The November show was a very great improvement upon that of 1903, both in respect to the site of the exhibition and the number of entries. The December show suffered somewhat from the damp foggy weather which prevailed at the time; still the exhibition was a commendable one for so late in the season, and distinctly better than that of the previous December.

Arrangements have been made with the Crystal Palace Company for three exhibitions to take place at Sydenham in the present year. The dates are October 4 and 5, November 1, 2, and 3, and December 6 and 7.

The experiment of holding an exhibition of market Chrysanthemums at Essex Hall, on December 14, proved a distinct and gratifying success, and excellent collections were staged, while the novelty of the exhibition attracted a good deal of public interest. The growers of market varieties for Covent Garden and the salesmen gave their warm and valuable support to the show. A satisfactory sum was raised by special subscriptions for the prizes, and the cost to the Society has been repaid. The advisability of holding a show of market Chrysanthemums is under consideration.

During the year six meetings of the Floral Committee were held, three at Essex Hall and three at the Crystal Palace, and twenty-five First-class Certificates were awarded. The usual number of meetings will also be held in the present year.

The annual outing in July last took the form of a visit to the princely domain of Waddesdon Manor, by the kind permisson of Miss Alice de Rothschild.

The annual dinner, presided over by the President, took place at the Holborn Restaurant on November 27. Over a hundred attended.

The financial position of the Society is satisfactory, notwithstanding that upwards of £50 additional was given in prizes at the November show as compared with 1903. The reserve fund amounts to £117 16*s.* 9*d.*, £115 of which is on deposit.

Arrangements have been made for holding a conference meeting on early Chrysanthemums in connection with the October show at the Crystal Palace.

In May last the Royal Horticultural Society of Piedmont celebrated the fiftieth year of its existence by holding a great International Show in Turin. A deputation consisting of Mr. T. Bevan and Mr. Harman Payne attended on behalf of the National Chrysanthemum Society and were most cordially entertained, it being particularly emphasized that this was the first time an English horticultural society had ever been represented at such a show in Italy." [?]

The Secretary pointed out the very serious decline that is taking place in the matter of receipts from members' subscriptions, and urged all to support him to alleviate this by prompt payment, and where possible by the introduction of new members to fill the ranks of those who have fallen out. Since the year 1897 there has been a steady drop in this direction, while as many as 104 members were in arrears as recently as December 31.

The Report and Balance-sheet, on the proposition of Mr. Witty, was carried unanimously, a vote of thanks being awarded the Auditors.

ELECTION OF OFFICERS.

Mr. Witty proposed the election of Mr. Chas. E. Shea to the Presidency for the coming year, and that he be accorded a hearty vote of thanks for presenting his special prize of £5 5*s.* and for presiding at the Annual Dinner, with an expression of regret at the circumstances which compelled his absence that evening.

Mr. Taylor was elected Treasurer, and Mr. Foster Chairman of Committees, with Mr. J. H. Witty Vice-Chairman.

Mr. C. Harman Payne was re-elected Hon. Foreign Corresponding Secretary, a post which he has held since 1888.

Mr. Such proposed Mr. R. Dean as Secretary for the coming year, the proposition being received with great cordiality. Mr. Dean, in thanking the members for their appreciation of his past services, assured them that although now past his seventy-fifth birthday he would still continue to devote his best services to the interests of the Society.

One-third of the members constituting the Committee retire annually, and these, with the resignation of Messrs. H. J. Jones and J. W. Wilkinson and another, caused thirteen vacancies, which were filled by the election of the whole of the outgoing members, with the addition of Messrs. C. J. Ellis, W. Harrison, and J. Green.

The resolution to present the honorary fellowship of the Society to Mr. Ballantyne caused some discussion as to the advisability of conferring a diploma upon those admitted to this honour; this was understood to be already within the province of the Committee under the new additions to the rules.

An amendment was made to Rule XIV., the result of which will be that the Floral Committee will also be the Classification and Catalogue Committee. Rule XVI., relating to the Classification Committee was deleted, and the following words added to Rule VI.: "Honorary Fellows shall be admitted to such of the privileges of the Society *on such terms as the Executive Committee may from time to time determine.*"

Six new members were elected, and two Societies affiliated to the Society.

Mr. C. Harman Payne drew attention to the coming horticultural exhibition in Paris, and spoke of the advisability of the Society being represented. The proposition was favourably received, and Mr. Payne was deputed to receive names of those who would form part of the deputation, and who would be willing to pay their own expenses.

SCHEDULES RECEIVED.

TORQUAY DISTRICT GARDENERS' ASSOCIATION'S Spring Flower Show, to be held at the Bath Saloons, on Thursday, March 30, 1905; and Chrysanthemum Show, to be held on Thursday, November 2, 1905.

BOROUGH OF REIGATE COTTAGE GARDEN AND HORTICULTURAL SOCIETY'S SHOW at Stone House, Reigate, on Wednesday, July 12, 1905.

GARDENERS' DEBATING SOCIETIES.

CRAWLEY GARDENERS' MUTUAL IMPROVEMENT.—At the meeting of the members of this Association on January 17, Mr. R. H. Holton presiding, an interesting paper was read by Mr. J. Martin, gr. to Mr. P. Saillard, Buchan Hill, on "Malmaison Carnations." Mr. Martin said a span-roofed house with plenty of side and top ventilation was best suited to the growth of the Malmaison. He gave his methods of treating the plant from the time of "layering" to the time of blooming, mentioned the kind of compost which he had found most suitable, and the proper times for syringing and applying water. He advised that the layers should not be pegged too closely together, or, when rooted, they would become drawn and, as a consequence, be weak and partly spoiled. He also advocated that loam and leaf-mould intended for the culture of the Malmaison should be well burnt, so as to destroy wire-worm and other troublesome pests. When potted for blooming plenty of air is necessary for the plants to keep them free from diseases commonly known as "rust" and "spot." The shading of the blossoms, staking and feeding, and other essential work for the welfare of the plants were dealt with by Mr. Martin, and names of the best varieties were given, as well as the various recipes for the prevention and extermination of diseases and insect pests.

CHELMSFORD AND DISTRICT GARDENERS'.—At the weekly meeting on Friday, February 3, under the presidency of Mr. Rixon, Mr. C. Simpson, St. John's Nurseries, Chelmsford, gave a paper on "Grapes." A brief historical sketch of the Grape was given by way of introduction. The lecturer referred to the life-period of the Grape, and its capability of fruiting when 400 years of age. The speaker treated of most cultural points in detail, and in speaking of "shanking" thought this was due to defective borders or over-cropping, while "scalding" was caused from insufficient ventilation. A discussion followed. *S. M. C.*

DORCHESTER AND DISTRICT GARDENERS'.—The annual meeting of this Society was held on Monday, January 30. The chair was taken by Mr. E. A. C. Dare, who was supported by the Hon. Secretary (Mr. E. Nutting). The Annual Report showed that the meetings had been well attended. The Balance-sheet showed a net balance to the Society's credit of £9 4*s.* 9*d.* The election of officers for the ensuing year then took place. Captain Dymond was re-elected President. The Vice-Presidents were re-elected in a body, and the names of the Mayor (Mr. J. W. Fudge) and Captain E. A. Pope were added to the list. The Committee were also elected, Messrs. Biggs, Dare, and Sparrow filling the vacancies caused by three retiring members. Mr. Nutting was elected to the dual offices of Hon. Secretary and Treasurer.

REDHILL, REIGATE, AND DISTRICT GARDENERS'.—This Society held its usual fortnightly meeting on January 31, under the presidency of Mr. W. P. Bound. Mr. Plyman, of Wye College, lectured on "Manures and their Effects on Plants." This was the second of the series, and dealt chiefly with nitrates, phosphates, and nitrogen, all of which are very essential in the development of plants.

LIVERPOOL HORTICULTURAL.—The third meeting of the above Society was held on Saturday, February 4, Mr. Foster in the chair. Mr. Robert Newstead delivered a most interesting paper on "The Currant-bud Mite, its History, and the various suggested Remedies." The pest first originated in North Britain some years ago, and has since travelled almost all over the kingdom. In order to realise how minute this pest is, the number of them found on investigation in a single bud has been estimated at from 2,748 to 3,000. Seen under the microscope, they are of a glassy-white appearance. They multiply very rapidly from March till August. The lecturer spoke of experiments he has tried in order to combat them, but up to the present nothing has proved successful. *J. P.*

READING AND DISTRICT GARDENERS'.—The Annual Report of this flourishing Society records continued prosperity, a fact for which the members must be congratulated. The membership has now increased to 263, including an addition of thirteen during the past year. The meetings have been well attended, the average attendance being one hundred. The summer outings proved a great success, and were events of considerable interest. The Balance-sheet records a satisfactory financial state, there being a credit balance on the year's working of £28 8*s.* 1*d.* The first meeting held in the new year took place at the Abbey Café on January 30, Mr. W. J. Townsend presiding over a large attendance of members. The subject for the evening was "Winter Vegetables and Salads," given by Mr. J. Gibson, the well known vegetable exhibitor. The subject was treated in a most practical manner, and useful advice was given as to the keeping and storing of the various vegetables touched upon, including Brussels-Sprouts, Savoys, Broccoli, Kale, Cabbage, Rosette Colewort, Kohl Rabi, Artichokes, Stachys tuberifera, Salsafy, Scorzonera, Celery, Celeriac, Leeks, Spinach, Parsley, Turnips, Swedes, Beans, Rhubarb, Seakale, Mushrooms, Tomatos, Potatos, Lettuce, Endive, Chicory, Radishes, &c. A discussion followed. There were several excellent exhibits, including a basket of salads comprising Lettuce, Endive, Chicory, and Dandelion. Thirteen new members were elected.

NORTH FERRIBY GARDENERS'.—The fortnightly meeting of the above Society was held on Wednesday, February 1st, under the presidency of Mr. Burton. Mr. E. Wright, The Gardens, Thwaite House, Cottingham, read a paper on "Cyclamens." The essayist, who dealt with his subject in a practical manner, recommended raising the plants each year from seed. Plants raised from seed sown in October should flower the following year at about Christmas. The essay was much appreciated by the members, and evoked a good discussion.

EGHAM AND DISTRICT GARDENERS'.—A meeting of the above Society was held on the 1st inst. The evening was devoted to discussions on gardening subjects generally. Amongst other questions discussed was that of the best varieties of Peas, Potatos, &c., suitable for growing in the district, of the cause and remedies for the scab on Potatos, and of the advisability of removing the pseudo-bulbs from some varieties of Dendrobiums in order to enhance the flowers for cut flower decoration. An unanimous vote was passed in favour of the amalgamation of Gardeners' Mutual Improvement Associations for the exchange of lecturers, &c.

CHESTER PAXTON.—A meeting of the above Society was held at the Grosvenor Museum on Saturday, February 4, when Mr. N. F. Barnes, Eaton Gardens, read a paper on "Garden Design," the essay being illustrated by a series of lantern-slides. The history of garden design and garden architecture was traced from early times, the styles of many of the different periods being well illustrated by the pictures shown on the screen. It was shown that these styles varied very much in character, and some at least had evidently been influenced by the particular style of house architecture in vogue at the same time. Not the least interesting of the pictures were those of the new Dutch garden at Eaton, which was planned by and laid out under the supervision of Mr. Barnes. An interesting discussion followed.

KINGSTON GARDENERS'.—At the meeting of this Society, held on February 3, the Vice-President, F. G. Shipway, Esq., gave a very instructive paper on "Apple Culture," chiefly from an an amateur's point of view, with detailed advice for the cultivation of Apples in small gardens, including the most suitable stocks for grafting purposes, the best forms of trees to plant, the most suitable varieties, suitable soils and manures, and the diseases and pests attacking the Apple, with the best remedies for the same. The lecturer gave the following selection of twelve dessert and of twelve culinary Apples as being suitable varieties to grow:—Dessert: Beauty of Bath, Irish Peach, Devonshire Quarrenden, Duchess of Oldenburgh, Lady Sudeley, Worcester Pearmain, Cox's Orange Pippin, King of the Pippins, Alfriston, Braddick's Nonpareil, Court Pendu Plat, and Sturmer Pippin. Culinary: Early Victoria, Ecklinville Seedling, Lord Derby, Newton Wonder, Lane's Prince Albert, Warner's King, Wellington, New Hawthornden, Golden Noble, Beauty of Kent, Sturmer Pippin, and Bramley's Seedling. A collection of twenty-four dishes of fine and well-preserved Apples came from Mr. Alderman, Morden Hall Gardens. *J. T. B.*

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending February 4, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
JANUARY 29 TO FEBRUARY 4.	At 9 A.M.		DAY.	NIGHT.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	40	38	48	36	28	38	39	41	Tot 0·01	4	24

THE WEATHER IN WEST HERTS.

Three Very Warm Nights.—The present warm period has now lasted eleven days, during which there has not occurred a single unseasonably cold day or night. On the warmest day the temperature in the shade rose to 55°, and on three nights the exposed thermometer did not fall lower than 40°—which is 14° in excess of the average for a February night. The ground temperatures are rising, and at the present time the reading at 2 feet deep is about 2° warmer, and at 1 foot deep about 4 warmer than is seasonable. There occurred a little rain on two nights during the week, but virtually there has been no rain worth mentioning for three weeks The drainage through both percolation gauges has been gradually decreasing, and the daily measurements are now very small. The sun shone on an average for three hours a day during the week, or for an hour a day longer than is usual at this season. The winds have been, as a rule, high, but in no hour did the mean velocity exceed 18 miles—direction W.N.W. The average amount of moisture in the air at 3 o'clock in the afternoon was 6 per cent. less than is seasonable. The double Snowdrop was first in flower in my garden on the 6th—which is two days earlier than its average date of flowering in the same spot during the last eighteen years.

JANUARY.

A Remarkably Sunny January.—The temperature during the month varied a good deal from week to week, but taken as a whole it was slightly warmer than the average. Although rather warm, there has been during the last eight years only one other January in which the mean temperature has been as low. On the warmest day the temperature rose to 53°, and on the coldest night the exposed thermometer registered 15° of frost—both high extremes for the month. Rain or snow fell on only nine days, seven of these being in the first half of the month, and to the total depth of less than 1¼ inch, or about half the January average. On two days the ground was covered for a short time with snow to the depth of half an inch. The sun shone on an average for two and a half hours a day, or for an hour a day longer than usual, making this the sunniest January of which I have here any record. The wind was on the whole about seasonable in strength, and at no time exceeded 21 miles an hour; direction W.N.W. The air remained singularly dry, in fact drier than in any previous January, the mean amount of moisture in it falling short of the average by as much as 8 per cent.

OUR UNDERGROUND WATER SUPPLY.

Since the winter half of the drainage year began in October every month has been more or less dry. The total deficiency in rainfall for those four months is 4¾ inches, equivalent to a loss on each acre in this district of 107,200 gallons. Last year at the same time the amount of rain was to nearly the same extent in excess of the average. *E. M., Berkhampstead, February* 7, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 88.]

MARKETS.

COVENT GARDEN, February 8.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, pink, p. 12 bunches.	2 0- 3 0	Mimosa (Acacia), per basket ...	6 0-10 0
— fulgens, per doz. bunches.	3 0- 4 0	Narcissus, per basket... ...	8 0-10 0
Carnations, per doz. bunches.	9 0-12 0	Ranunculus, per doz. bunches.	9 0-12 0
Fern, French, per doz. bunches.	6 0	Roses, per dozen blooms ...	1 0- 2 0
Freesias, p. doz. bunches ...	2 0- 4 0	Violets, blue, per dozen bunches. ...	1 0- 2 0
Lilac, per bunch.	3 6- 4 0	Parma. per large bunch...	3 6- 4 6
Marguerites, per doz. bunches.	2 0- 3 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia Drummondi, per doz.	18 0-24 0	Dracænas, p. doz.	9 0-24 0
Aralia Sieboldi, doz.	4 0- 6 0	Daffodils, Yellow Trumpet, doz.	6 0- 9 0
Aspidistras, green, per doz. ...	18 0-24 0	Ericas, per doz....	15 0-24 0
— variegated, per doz. ...	30 0-42 0	Euonymus, per dozen	4 0- 9 0
Azalea indica, p. doz.	24 0-42 0	Ferns, in thumbs, per 100... ...	8 0-12 0
— mollis, p. doz.	24 0-42 0	— in 48's, p. doz.	4 0-10 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0	— in 32's, p. doz.	9 0-18 0
— Sprengeri, doz.	8 0-12 0	Ficus elastica, p. doz.	9 0-12 0
— tenuissimus per doz. ...	8 0-10 0	— repens, p. doz.	6 0- 9 0
Begonia Gloire de Lorraine, doz.	12 0-18 0	Genistas, per doz.	9 0-12 0
— Turnford Hall, per doz. ...	9 0-15 0	Hyacinths (3 in a pot), per doz.	8 0-12 0
Boronia megastigma, p. doz.	18 0-24 0	Kentia Belmoreana, per doz...	12 0-18 0
Calla æthiopica, per doz. ...	8 0-10 0	— Fosteriana, p. doz.	12 0-21 0
Cinerarias, dozen	7 0-10 0	Latania borbonica, per doz. ...	9 0-15 0
Crotons, per doz.	12 0-30 0	Marguerites, doz.	6 0-10 0
Cocos Weddelliana, per doz. ...	18 0-30 0	Primula sinensis, per doz. ...	4 0- 6 0
Cyclamen persicum, per doz.	9 0-12 0	— obconica, per dozen ...	4 0 6 0
Cyperus alternifolius, p. doz.	3 0- 5 0	Solanum capsicastrum, per doz.	6 0- 8 0
— laxus, p. doz.	3 0- 4 0	Spiræa japonica, per doz. ...	8 0-12 0
		Tulips, in boxes, each	1 6- 2 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each ...	0 9- 1 0	Cycas leaves, each	1 0- 1 6
— — medium, each ...	0 4- 0 6	Fern, English ...	3 0- 4 0
— — short sprays per bunch...	1 0- 2 6	Ivy-leaves, bronze	1 6- 2 0
— Sprengeri ...	0 9- 1 6	— long trails, per bundle ...	1 0- 2 0
— tenuissimus..	0 9- 1 0	— short green, per doz. bnch.	1 0- 1 6
Adiantum cuneatum, doz. bun.	6 0- 9 0	Myrtle	3 0- 4 0
Croton leaves, doz.	1 0. 2 0	Smilax, p. bunch	4 0- 6 0
		Hardy foliage (various), per dozen bunches	3 0- 6 0

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Azalea Fielderi, per doz. bun..	4 0- 6 0	Lilium longiflorum, bunch	4 0- 5 0
— mollis, per dz. bunches ...	12 0-15 0	-- tigrinum, bun.	2 0- 2 6
Bouvardias, per doz. bun.	4 0- 6 0	Lily of the Valley, per dozen bun..	6 0-18 0
Calla æthiopica, per doz. blooms	3 0- 6 0	Marguerites, white, per dozen bun.	3 0-4 0
Camellias, per dz. blooms	2 0- 3 0	— yellow, per dz. bunches ...	3 0- 5 0
Carnations, best American vars., per dz. blooms	3 6- 6 0	Narcissus gloriosus, per doz. bun..	2 0- 3 0
— smaller blooms, per doz. bun..	18 0-30 0	— paper-white, per doz. bun..	1 6- 2 6
Cattleya labiata, per doz. blooms	8 0-12 0	— Pheasant's Eye, per doz. bunches ...	4 0- 6 0
Chrysanthemums, best blooms, pr. dz. blooms	2 6- 4 0	— Soleil d'Or, per dozen bunches ...	2 6- 3 0
— in bunches, per doz. bun..	9 0-24 0	Odontoglossum crispum, pr. dz. blooms	2 6- 3 0
Cypripedium insigne, per doz. blooms	2 6- 3 6	Pelargoniums (Show), white, per dozen bunches ...	4 0- 6 0
Daffodils, single yellow, per dz. bunches ...	4 0- 9 0	— (Zonal) double scarlet, per doz. bunches.	4 0- 8 0
— double, per dz. bunches ...	6 0- 8 0	— salmon and pink, per doz. bunches ...	6 0- 8 0
— Golden Spur, per doz. bun.	8 0-10 0	Roses, Niphetos, pr. dz. blooms	2 0- 4 0
— Henry Irving, per doz. bun.	6 0- 7 0	— Bridesmaid, pr. dz. blooms	4 0- 6 0
— princeps, per doz. bunches.	5 0- 0	— Kaiserin A. Victoria, per dozen blooms	6 0- 9 0
— Sir Watkin, per doz. bun.	9 0-10 0	— General Jacqueminot, per dozen blooms	4 0- 8 0
Dendrobium nobile, 12 blooms.	2 6- 3 0	— C. Mermet, pr. dozen blooms	4 0- 6 0
Eucharis grandiflora, 12 blooms	2 0- 3 0	— Sunrise, per dozen blooms	3 0- 4 0
Euphorbia jacquiniæflora, bunch	1 6- 2 6	Tuberoses, per dz. blooms ...	6 0- 8 0
Gardenias, per dz. blooms	2 0- 3 0	— on stems, per doz. bunches.	9 0-12 0
Hyacinths, Roman, per doz. bun. ...	6 0- 8 0	Tulips, per dozen bunches... ...	6 0- 9 0
Lilac (English forced), per bun.	3 0- 4 0	Violets, blue, English, per dz. bunches... ...	2 0- 4 0
Lilium auratum, per bunch ...	2 6- 3 0		
— lancifolium rubrum and album, p. bun.	2 0- 3 0		

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, bushel ...	2 0- 5 0	Grape-Fruit, case	10 0 —
— English, sieve or half bushel	1 6- 3 0	Grapes, Gros Colmar, p. lb.	1 0- 1.3
— — per barrel.	12 0-16 0	— Muscat, A., lb.	20 0 —
— Newtown Pippin ...	40 0 —	— — B., per lb.	5 0 —
— — per case ...	17 0-20 0	— Alicante. lb.	1 2- 1 6
Bananas, bunch .	5 0-11 0	— — per barrel.	16 6-20 0
— loose, dozen...	1 0 —	Lemons, per case	7 0-15 0
Chestnuts, bag ...	16 0 —	Lychees, per box.	1 9 —
Chow-Chows, per dozen	2 6 —	Oranges, per case	8 0-12 0
Cobnuts, per lb. .	0 5 —	— Blood	6 0- 8 0
Cranberries, per box	12 6 —	— Navel	14 0-16 0
Custard-Apples, per dozen ...	8 0-15 0	— Jaffa, per box	11 0 —
		— Seville ...	5 6-11 0
		— Mandarines (200)	5 0- 6 0
		Pines, each ...	2 0- 3 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen ...	3 6 —	Leeks, doz. bndls.	2 6 —
Asparagus, bunch	4 0- 5 0	Lettuces, Cabbage, per dozen ...	1 0- 1 2
— Giant	12 0 —	Mushrooms (house) per lb.... ...	1 0 —
— Paris Green...	4 6 —	Onions, pickling, per sieve ...	5 0- 6 0
— Spanish, bunch	1 9 —	— English, cwt.	14 0 —
— Sprue, p. doz.	10 0 —	-- Dutch, p. bag.	12 0 —
Beans, dwf., p. lb.	2 6 —	— Valencia, per case	14 0 —
— Madeira, per basket... ...	3 6 —	Parsley, per doz. bunches ...	1 6 —
Beetroot, bushel	1 6 —	Parsnips, per bag	3 0 —
Broccoli, Sprouting, bag	1 6 —	Peas, French, per packet... ...	0 10 —
Brussels-Sprouts, bag	2 6 —	Potatos, per ton	60 0-100 0
Cabbages, p. tally	3 6 —	Radishes, p. doz. bunches ...	1 6 —
Carrots, 12 bunch.	2 0 —	Rhubarb, York, per dozen ...	1 0 —
— bag	3 0 —	Salad, small punnets, per doz	0 9 —
Cauliflowers, doz.	1 9 —	Savoys, per tally	3 0 —
— Cherbourg ...	1 9 —	Seakale, per doz.	12 0 —
— Italian, bskt.	2 7½-2 10½	Shallots, p. sieve	4 0 —
— St. Malo, doz.	2 0 —	Tomatos, per box	12 0-16 0
Celeriac, per doz.	2 6 —	Turnips per doz.	1 6 —
Celery, doz. bnchs.	8 0-12 0	— per bag ...	2 0 —
Cress, doz. pun.	0 9 —	Turnip-tops, bag	2 0 3 0
Cucumbers, doz.	6 0- 8 0	Swede, per bag ...	1 6 —
Curled Kale, bush.	1 6 —	Watercress, per doz. bunches.	0 6- 0 8
Endive, per doz,	1 7- 1 9		
Garlic, per lb. ...	0 5 —		
Greens, bushel ...	3 0 —		
Horseradish, foreign, p. bunch	0 10 —		
Mint, per dozen...	3 0 —		

POTATOS.

Dunbars, 90*s*. to 100*s*.; Teneriffe, 12*s*. to 14*s*. per cwt.; Algerian, per lb., 4*d*.; Jersey, per lb., 6*d*.; various, home-grown, 60*s*. to 70*s*. per ton. *John Bath*, 32 & 34, *Wellington Street, Covent Garden.*

FRUITS AND VEGETABLES.

GLASGOW, *February* 8.—The following are the averages of the prices during the past week:—Apples, American, 9*s*. to 18*s*. per barrel; do., Canadian, 12*s*. to 25*s*. do.; Oranges, ordinary 420's, 6*s*. to 7*s*. per case; do., large, 8*s*. to 10*s*. do.; do., extra large, 10*s*. to 14*s*. do.: do., large 714's, 8*s*. to 10*s*. do.; Lemons 8*s*. to 15*s*. per case; Grapes, home, 9*d*. to 1*s*. per lb.; Colmars, 10*d*. to 1*s*, 6*d*. do.; Alicantes, 8*d*. to 1*s*. 2*d*.; Bananas, 6*s*. to 12*s*. per bunch; Tomatos, 3*s*. 6*d*. to 4*s*. 6*d*. per box; Onions. 4's, 12*s*. to 13*s*. per case; 5's, 15*s*. to 16*s*. do.; Mushrooms, 1*s*. to 1*s*. 6*d*. per lb.

LIVERPOOL, *February* 8.—*Wholesale Vegetable Market* (*North Hay*).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatos, per cwt.: Bruce, 2*s*. 2*d*. to 2*s*. 6*d*.; Main Crop, 2*s*. 9*d*. to 3*s*. 9*d*.; Up-to-Date, 2*s*, to 2*s*. 4*d*.; Turnips, 6*d*. to 8*d*. per dozen bunches; Swedes, 1*s*. to 1*s*. 2*d*. per cwt.: Carrots, 3*s*. to 3*s*. 3*d*. do.; Onions, foreign, 14*s*. to 14*s*. 6*d*. per bag; Parsley, 6*d*. to 8*d*. per dozen bunches; Cauliflowers, 1*s*. 9*d*. to 2*s*. 6*d*. per dozen; Cabbages, 6*d*. to 10*d*. do.; Celery, 8*d*. to 1*s*. 4*d*. do.—Fruit: Apples, American, 7*s*. 6*d*. to 12*s*. 6*d*. per barrel; Canadian. 8*s*. to 16*s*. do.; Oranges, Valencia, 6*s*. 6*d*. to 8*s*. 6*d*. per case; large do., 7*s*. 6*d*. to 12*s*. 6*d*. do.; Jaffa, 3*s*. 6*d*. to 9*s*. 6*d*. per box; Bitters, 4*s*. 6*d*. to 8*s*. 6*d* per package: Lemons, Palermo and Messina, 5*s*. to 7*s*. per case; Naples, 3*s*. 6*d*. to 7*s*. 6*d*. per box. *St. John's.*—Potatos, 10*d*. to 1*s*. per peck: Cucumbers, 6*d*. to 8*d*. each; Grapes, English, 1*s*. 6*d*. to 2*s*. 6*d*. per lb.; do, foreign, 6*d*. to 8*d* do.; Pine-apples, 3*s*. to 5*s*. each; Mushrooms, 1*s*. to 1*s* 3*d*. per lb. *Birkenhead.*—Potatos, 8*d*. per peck; Cucumbers, 1*s*. each; Filberts, 1*s*. to 1*s*. 2*d*. per lb.; Celery, 1½*d*. to 3*d*. per stick; Apples, 1½*d*. to 3*d*. per lb.; Pears, 2*d*. do.; Grapes, English, 1*s*. 6*d*. to 3*s*. 6*d*. do.; do., foreign, 6*d*. to 8*d*. do.; Tomatos, English, 4*d*. to 6*d*. do.; Mushrooms, 1*s*, to 1*s*. 4*d*. do.

COVENT GARDEN FLOWER MARKET.

THE recent mild weather has caused flowering plants to develop rapidly, especially bulbous plants. Daffodils are over-plentiful and are considerably lower in prices, while Tulips and Hyacinths are also very plentiful. Richardia (Calla) æthiopica is good but is not much in demand. Genistas are now arriving from several growers. Marguerites continue abundant. Cinerarias are good; these are now sent by several growers. Azalea indica in various sizes are well-flowered, but the supply is somewhat over plentiful. There are also a few good specimens of A. Fielderi and of A. mollis. Of Erica hyemalis there are still some fairly good plants obtainable, as there are also of E. persoluta alba, E. fastigiata, and E. melanthera. There is not a large demand for hard-wooded plants; these now include Acacias armata, ovata, and Drummondi, Boronia megastigma, and Diosma gracilis. Plants of Begonia Gloire de Lorraine of good quality are still to be had. A few good Lilium longiflorum in pots are seen. Cyclamen are now very good, while Solanums are still to be had. Ferns in all sizes are plentiful, and since the mild weather has prevailed they have sold more readily. Palms are also plentiful; growers of these plants complain of diminshed trade compared with that of a few years ago. Aspidistras in both green and variegated varieties are plentiful; prices for these do not vary much. Ficus elastica sells slowly; Ficus repens is not selling well just now. Hardy perennials and herbaceous plants are now to be had, also several varieties of spring bedding plants. Hardy trees, shrubs, and climbers in variety are all procurable.

CUT FLOWERS.

The mild weather has made a considerable difference to supplies, especially among Roses, of which there is a regularly increasing supply. The variety General Jacqueminot is arriving from several growers; the flowers are not large, but they are bright in colour. La France and Caroline Testout are very good, also Kaiserin Augusta Victoria. Niphetos is now plentiful. Sofrano (English-grown) are of a good colour, but small in size. Catherine Mermet is not well coloured. Daffodils are coming from many sources, and are now the chief feature among cut flowers. It will be difficult to give even approximate prices. Some of the best varieties maintain good prices, but already the prices for ordinary samples have gone down considerably. Narcissus poeticus was as low in price on Tuesday as 4*s*. per dozen bunches. The varieties Paper-white and Soleil d'Or are also very plentiful. There are still fairly good Chrysanthemum flowers seen. The supply of Orchid-bloom is more than equal to all demands. In Carnations the variety Mrs. T. W. Lawson is now conspicuous. It is remarkable that there are very few really good flowers of the English varieties seen. The variety Madame Thérèse Franco (Mrs. Leopold de Rothschild) has been marketed in good condition. Liliums continue plentiful and there is little variation in the prices for these. Zonal Pelargonium "Raspail" is now more abundant and is lower in price. Violets are more plentiful, Snowdrops, Wallflowers, and other spring flowers are making their appearance.

Supplies of French flowers, with the exception of Roses, are coming in better again. Ranunculus, Anemones, and Double Stocks are all good. There are several different varieties of Acacias (Mimosa), some are past their best in quality. There are good supplies of all kinds of foliage. *A. H., Wednesday, February* 8.

ENQUIRIES.

Lady Gardener.—I am anxious to know if there is any way for a girl to get training in gardening (of such a character as to fit her for obtaining a post as lady gardener) less expensive than the Horticultural College at Swanley or Lady Warwick's Hostel? Do any botanical gardens or large nursery establishments employ women gardeners? *E. C. C. D'O.*

Pinus insignis.—I would like to ask those who have planted this tree in quantity if it is usual or advisable to plant Pinus insignis in sacking? I know where there has been recently planted about 100 of these trees. They were received from the nursery, each plant with a nice ball of soil around the roots tied up in sacking, and with the advice that the plants were to be planted as received, without taking away the sacking. *W. J. P.*

Moss.—Can any reader tell me where I can find some information respecting that curious Moss, Dicranum glaucum, which is found in the Pinewoods near Weybridge in rounded, unattached tufts of various sizes? I have never met with any explanation of the mode in which these tufts become entirely detached from the soil and self-supporting. *J. E. H.*

Acetylene Gas.—Is the spent carbide good for the kitchen-garden? What time would be best to apply it? Our soil here is of a rather stiff nature, resting on chalk. *G. A. H.*

ANSWERS TO CORRESPONDENTS.

A Gardener's Testimonials: *J. R.* The employer should certainly return the testimonials to you at once under the circumstances you have described, and especially after the trouble you have been caused. It would be well to consult a solicitor; and in future to avoid such needless worry by holding the originals and submitting copies only.

Apple: *J. H. A.* The brown sunken patches are caused by a fungus called Glœosporium fructigenum (see fig. in *Gardeners' Chronicle*, Oct. 8, 1904, p. 249). Spray with a solution of potassium sulphide—half an ounce to a gallon of water, and add one ounce of soft-soap. Commence first when the Apples are just set, and repeat at intervals of ten days until no trace of disease is to be seen. Cold storage prevents the spread of the disease when the fruit is ripe.

Books: *W. J. S.* We know of no book in the English language treating exclusively upon Palms, but there are chapters on the subject in most of the books upon stove and greenhouse plants, or in the gardening encyclopædias, as *Thompson's Gardeners' Assistant*, new edition, edited by Mr. W. Watson, Curator at Kew.

Carnations: *E. S.* Varieties of the type of Souvenir de la Malmaison should at no time be syringed, and even the damping of stages, paths, and other surfaces should only be done in bright weather; especially is this essential during winter. The tree or perpetual-flowering sorts, being less liable to the attacks of fungus, may be judiciously sprayed during all the growing season and in bright weather in winter. The foliage of these plants being of a softer character, aphides are sometimes troublesome, and a dry, arid temperature would encourage them; recourse must therefore be had to the syringe to minimise the risk and at the same time stimulate growth.

Cobham Park: *G.* Most of the glasshouses at Cobham Park, of which details were published last week, were, we are informed, built by Mr. James Gray, Chelsea.

Compensation for Trees and Shrubs: *J. R. G.* We should suppose that the purchaser of the estate purchased the movable trees and shrubs also.

Correction. In the paragraph on Ventnor in January, on p. 73, instead of Barometer 39·9 read 30·9. (See also under "Potatos.")

Crocuses: *R. W. W.* The sepals and petals are more or less laciniate, and approach a semi-double condition.

Cypripedium Leaves: *F. H.* The injury is due to the presence of moisture on the leaves when the temperature was falling. Admit more air to the house, and spray the plants only when the temperature is rising and the weather bright.

Dendrobium: *Magenta.* A very good variety of D. nobile, being similar to the form known as D. nobile nobilius.

Fig-trees Dropping their Fruits: *G. S.* This may arise from several causes, and which it may be in your case we are unable to say. The atmosphere of the house should be kept moist, and the trees syringed overhead twice each day in bright weather, damping the floors and other surfaces instead when the weather is dull. Figs require heat, much moisture, a little ventilation at all times, varying in degree according to the condition of the weather, a restricted root-run, abundance of moisture at the roots, and applications of liquid manure when the flowering stage has passed and the fruits are swelling. The trees should not be permitted to carry excessive crops. See note in the "Fruits under Glass" Calendar on p. 87.

Fumigating Tender Plants: *H. M.* Instead of seeking to obtain a moist atmosphere at such a time you should refrain from spraying the plants and damping the surfaces in the house for some hours, or all day, before the process of fumigating the plants is commenced. None of the plants should have moisture upon their leaves at such a time. Choose an evening when there is little wind, make the house as air-tight as possible, and remember that it is better to repeat the operation on the following evening than to make the application too severe on the first occasion.

Horticultural Instructor: *W. F. Stanmore.* Among other qualifications it is essential to possess a good practical acquaintance with plain gardening, with a knowledge of how to do a thing and of the reason why, more especially in fruit and vegetable culture. The following requirements may also be mentioned:—An intimate acquaintance with the more common garden pests, both fungi and insects, and the methods to be adopted for their extirpation. Power of exposition by word with the use of black-board or of magic-lantern, and in simple language "understandable of the people." Competence to act as judge at shows and in garden competitions. Ability to show novices how to handle and work in the most efficient manner with any kind of tool or simple machine, and to demonstrate the various methods of grafting, inarching, budding, root-pruning, and making cuttings. To be able to show how properly to plant various kinds of hedges, and to train the same when planted; also how to "set in" trees for felling. To point out how best to grow window-plants; how to pack fruit and vegetables for market, including sorting and grading. Indeed it is not easy to tell you what subjects you should not be acquainted with, so multifarious are the matters coming within the purview of a horticultural lecturer.

Lady Gardener: *J. W. H.* We do not know the lady's address. Write to the college authorities at Swanley, they may perhaps be able to supply it.

Names of Fruits: *W. B. S.* Pear Glout Morceau, and Apple Blenheim Pippin. (Thanks for Postal Order for 1*s.*, which shall be given to the Gardeners' Orphan Fund).—*M. Bros.* Pear Belmont.—*A. H.* 1, Blenheim Pippin; 2, Emperor Alexander; 3, Dean's Codlin; 4, Hormead's Pearmain; 5, Newton Wonder; 6, Tower of Glamis.—*Y. E. H.* Not recognised. The fruit much resembles that of Annie Elizabeth, but upon comparison for flavour is much superior to that variety.

Names of Plants: *J. W.* Cytisus monspessulanus.—*A. C.* 1, Dracæna intermedia; 2, Bilbergia iridifolia; 3, Dracæna concinna; 4, Hibiscus Cooperi; 5, Anthericum lineare variegatum; 6, Cyperus alternifolius; 7, Dracæna fragrans, probably, specimen bad; 8, Dracæna versicolor; 9, Yucca aloifolia mediovariegata; 10, Maranta Makoyana.—*F. G. G.* Petasites fragrans.—*W. T., Gloucester.* Odontoglossum × Adrianæ of ordinary quality, not worth sending for exhibition.—*J. P., Constant Reader.* Helxine Soleirolii, often grown like moss in Orchid-houses, and sometimes used in carpet-bedding out-of-doors.—*A. R. A.* 1, Epidendrum; 2, Cypripedium × Lathamianum; 3, Oncidium spilopterum.—*M. H. S. A.* Polygala chamæbuxus. — *Cilurum.* Jasminum Sambac and Chlorophytum elatum variegatum.—*F. P.* Eucalyptus Globulus in adult or fruiting stage. —*L. McC. (Shelton).* It is almost impossible for us to name plants from leaves only. 1, next week; 2, cannot tell without flowers; 3, Daphniphyllum macropodum; 4, Cupressus sempervirens; 5, Philesia buxifolia; 6, Viburnum lantanoides probably. — *W. S., Darlington.* Cœlogyne lactea, of no special commercial value.

New Zealand: *J. W.* There are undoubtedly good markets in the large towns, but we cannot accept the responsibility of advising you as to the prospects there compared with those existing in this country. Write to the Agent-General for that Colony, 13, Victoria Street, Westminster, London.

Potatos: *T. L., Sandown.*—In our reply last week the distances for planting were by some means reversed. It should have read 10 inches from set to set in the rows, and 2 feet between the rows.

Powellised Timber.—In reply to numerous correspondents from Germany, France, and India, we may say that the office of the Company is at Temple Bar House, 28, Fleet Street, London, where full information can be had.

Record Bunches of Grapes: *H. H.* The largest bunch of Grapes of which we have record was one of the variety Trebbiano, weighing 26 lb. 4 oz. It was shown by Mr. Curror, gr. to G. Douglas, Esq., Eskbank, Dalkeith, at the the Royal Caledonian Society's show, held on September 15, 16, 1875. This was a handsomely-formed bunch, the berries closely and solidly packed, so that the shoulders stood out firmly in all directions, and the bloom was perfect. Another bunch of Grapes shown at the same time, but of the variety White Nice, turned the scale at 25 lb. 15 oz. This bunch was shown by Mr. Dickson, gardener to John Jardine, Esq., of Arkleton, Langholme, Glasgow. It is no little credit to the gardeners of Scotland to have thus produced the two largest bunches of Grapes upon record. In more recent years a bunch of Gros Guillaume, grown by Mr. McKenna, gardener at Phœnix Park, turned the scale at 20 lb. (see *Gardeners' Chronicle*, February 6, 1886, p. 168), and in 1898 a bunch of Black Alicante was grown at Pitcullen Vineries which weighed 18 lb. 6 oz. (see fig. in *Gardeners' Chronicle* for January 29, 1898, p. 72). Our "record" book gives 8½ lb. as the largest bunch of Black Hamburgh, produced at Oakfield Gardens, East Barnet, Hertfordshire, in July 1858. An account of this bunch in our issue of that date states that the Oakhill Grapes were sold in Covent Garden market at 16*s.* per lb. The largest bunch of the variety Muscat of Alexandria recorded in our book weighed 2 lb. 11 oz. Three bunches of this variety shown by Mr. Roberts, Charleville, in 1878, totalled 15 lb. 6 oz. in weight.

Snail Plant: *R. S. P.* We suspect this plant is Medicago scutellata, which is known as the Snail Clover or Snail Trifoly, owing to the peculiar shape of the pods. The species is widely distributed.

Société Française d'Horticulture de Londres: *J. S.* The President is Mr. Geo. Schneider, 17, Ifield Road, Fulham Road, London, S.W.

Communications Received.—E. M.—Under Gardener (your communication is of too personal a nature. Address the Committee upon the subject).—R. A. R.—Sir H. M.—S. W. F.—H. M.—F. Mason Good.—F. J. A.—Sir M. F.—Harrison Weir.—H. Nehrling, Florida.—M. Cogniaux.—A. H. K.—Rev. G. W. R.—A. S.—W. M.—H. J. E.—B. W.—D. N. May.—E. B.—S. M.—J. A. W. (your letter has been forwarded)—C. H. P.—C. H. S.—W. H.—W. W.—G. W.—Cultus.—L. G., Brussels.—W. Grant.—D. M., Paris.—W. R. (appointment will be published; thanks for contribution to Orphan Fund). J. C. & Sons.—R. N.—C. T. D.—Sir W. T. T. D.—J. C.—J. A.—P. T. H. S.—C. Page.—Desperandum.—J. F. McL.—S. W. F.—O. T.—W. H.—T. W.—F. C. P.—W. D.—W. G. C.—Eiffel.—R. W.—C. L. B.

THE
Gardeners' Chronicle

No. 947.—*SATURDAY, Feb.* 18, 1905.

CONTENTS.

Aberdeen gardeners, lectures to 104
Alpine garden—
  Campanula garganica hirsuta 97
  Oxalis lobata ... 97
Books, notices of—
  Book of the Rose, the 101
  Flora and Sylva ... 104
Cedrus Deodara var. alba spica 105
Chrysanthemums, new continental varieties of 101
Clematis, the propagation of 112
Cryptomeria japonica 105
Cucumber "spot" disease... 105
Eremurus, the species of... 98
Forestry—
  The sessile-flowered Oak 101
Gardeners' Association, the British 110
Grape-vines in the open 106
Hollyhocks, annual ... 106
Holly, English in America 105
Jasminum nudiflorum 105
Kew notes 98
Kitchen-garden crops, rotation of 99
Measures, market ... 104
Orchids at Gatton Park 100
Orphan Fund, Royal Gardeners' ...104, 105, 110
Peaches, early 106
Peloria in Orchid flowers 101
Pencil for writing on labels, a new... ... 101
Plants new or noteworthy—
  Primula deorum ... 98
Potatos 100
Rose Frau Peter Lambert 101
Societies—
  Horticultural Club . 110
  Manchester & North of England Orchid 110
  National Chrysanthemum 110
  Royal Horticultural (annual meeting) 97, 106
Solanum Commersoni and edible Potatos... 105
Veitch Memorial Trust, the 104
Walls, beautifying ... 99
Walmer Castle, Kent 102
Week's work, the—
  Apiary, the 103
  Flower garden, the 102
  Fruits under glass... 102
  Hardy fruit garden 103
  Kitchen garden, the 103
  Orchid houses, the 102
  Plants under glass... 103

ILLUSTRATIONS.

Cœlogyne cristata, showing regular peloria 101
Gardener's Cottage at Linton Park, the 99
Odiham Vicarage, Hants, adorned with Vines, Clematis, &c. 99
Primula deorum, a new species from Bulgaria ... 98
Views of the historic castles at Walmer and Deal (Supplementary Illustration).

THE ROYAL HORTICULTURAL SOCIETY.

THE second centenary of the Royal Horticultural Society opens auspiciously. The new Hall and offices are complete, and though they are not faultless they are sufficiently so to silence the grumblers and those critics who seem only able to look at one facet of a crystal.

Nobody can say the Hall was not wanted—no one can deny that the want has not been well supplied. We know to whose munificence we owe the possession of a home. We cannot be too grateful for the help that Sir Henry Schröder and Sir Thomas Hanbury have afforded, and we do not forget that it was the liberality of Messrs. Elwes, Sherwood and Sutton that gave the initial impulse to the fund raised for the erection of the Hall and offices. Specially also we must not forget that their good example needs to be followed by many more before the debt now owing can be abolished.

The proceedings at the annual meeting held on Tuesday last are fully reported in another page, and the Report of the Council is in the hands of the Fellows. Sir Trevor Lawrence had just cause to be jubilant. He has been at the helm all through the dark days; he never flinched or despaired; but not even he could have imagined that the centennial year could have been consummated by the erection of a spacious and commodious Hall, by the acquisition of a garden five times bigger than Chiswick, and destined to rival, if not to eclipse, the glories of the old garden. In those dismal days how could he have looked forward to the accomplishment of these great facts, to a roll of Fellows numbering more than eight thousand, and to a substantial surplus on the year's working? We may almost say, looking back, that the impossible has been accomplished! In the future we have every reason to anticipate that while the routine work of the Society will be carried on under much more favourable conditions than formerly, real progress and advancement will result eventually from the establishment of a research station at Wisley. Utilitarian objects and the love of the beautiful are self-supporting, and need comparatively little assistance—they appeal to every-one; but if we want to increase the powers of the horticulturist, to open up new fields for his energies, increase his resources, and put weapons in his hands to combat the ills to which he is subjected, we must look to scientific research—research which may not at once appeal to the ordinary gardener, professional or amateur—research which cannot be carried out by him, but must be delegated to the specialist, unhampered by commercial considerations and unaffected (if that be possible) by the fascinations of floral beauty or other sensuous perceptions. With such views, we were pleased to hear the President's remarks on the speedy realisation of our hopes for a properly equipped and competently officered research station at Wisley.

It is a matter for regret that the summer show cannot be held this year in the paddock at Holland House, but this feeling does but intensify our sense of gratitude to Lord Ilchester for the privilege that he has accorded on former occasions. We have yet to see whether the location at Chelsea will be equally attractive.

Sir Trevor Lawrence's reference to the Secretary (Rev. W. Wilks), and to the work done by him and his staff, were heartily endorsed by the meeting. Indeed, it is impossible to over-estimate the value of Mr. Wilks's services, impossible not to attribute to him a very large share in bringing about the present prosperous state of affairs.

The financial matters, as explained by Mr. Gurney Fowler, are such as to ensure confidence in the future. Two things remain to be accomplished—the extinction of the debt and the endowment of the Lindley Library. The income of the Trustees is so extremely small that the vote by their brother-trustees of the Veitch Memorial Fund of £50 comes as a substantial temporary relief, and will, we trust, enable the custodians to proceed more rapidly with the binding and with the purchase of desirable books. In this connection we must not fail once again to record our thankfulness to Baron Schröder, who has borne the cost of the instalment of the Library in its present quarters in a fashion far more in consonance with the importance of the collection than has ever been the case before. The Library now can fairly take its place among the great metropolitan libraries, and those responsible for its management are relieved from the sense of humiliation they experienced at its former condition.

The speeches of Mr. Arthur Sutton, Mr. Elwes and others were very much to the point, and never were the thanks of the Fellows to the Council more truly earned than on this occasion.

ALPINE GARDEN.

CAMPANULA GARGANICA HIRSUTA.

HARDLY any of the Alpine Campanulas can lay claim to being more valuable for the rock-garden than C. garganica hirsuta, the pilose form of C. garganica, a well-known plant in this country. It comes early into bloom, and it continues to flower in almost constant succession until late in the year. It was still charming in the fourth week of October, with its little pale blue and white flowers, although it had been in bloom since early in June. This variety of the Gargano Bellflower, or the Bellflower of St. Angelo, is mainly distinguished from the type by the light-coloured hairs which cover its stems and leaves, so as to give them quite a grey appearance. It is as easily cultivated as the typical C. garganica, but it is a much prettier and more refined plant on the whole. Of slightly trailing or prostrate habit it makes an excellent rock-plant, and when seen hanging over a low ledge of dark stone, looks very pretty indeed.

Recently there has been introduced a variety with almost pure-white flowers, but slightly less vigorous (I use the word "vigorous" only comparatively, for it is not a strong grower), and it seems a little more tender during winter; but this will probably pass off as the plant becomes propagated in a less tender method. Very beautiful, however, as is this white variety, it cannot surpass the pale blue and white form which is recognised as the typical C. garganica hirsuta.

Like the other forms of the species, C. g. hirsuta, which is frequently met with simply as C. hirsuta, likes a rather peaty soil, together with abundance of water in the flowering season. It shows a preference here for a fair amount of shade, and does nowhere so well as facing the east, and in a spot where it only gets the full sun when it reaches near its meridian in summer. C. g. hirsuta is propagated by division or cuttings. *S. A.*

OXALIS LOBATA.

As a late-flowering alpine plant this bright little Wood Sorrel is invaluable. It is quite a pleasure to see its bright golden blossoms opening in the faint sun of October and November, and we should be delighted could we persuade it to keep them expanded when there is no sunshine. It is however a true sun-lover, even if it does not bloom until late in the year. It was introduced to me by the late Mr. H. Selfe-Leonard a good many years ago, and I can well recollect the pleasure given by its flowers one early November day when I came across the plant in bloom for the first time. Its bright little yellow flowers were most welcome and cheering, and I can never forget the pleasure they yielded then, just after frost had practically ruined my other flowers for the year. O. lobata is a native of Chili, but is hardy in most places with us, though in the coldest localities it might be protected with a little loose litter about it after it has finished blooming. It only grows about 3 inches high, and the flowers are displayed on a carpet of small glaucous leaflets. *S. Arnott, Carsethorn-by Dumfries.*

NEW OR NOTEWORTHY PLANTS.

◆

PRIMULA DEORUM, VELENOVSKY.*

WE lately received from Messrs. Stansfield Bros., of Kew, Southport, a coloured drawing of a Primrose from Bulgaria, which we have compared with specimens in the Kew Herbarium, and with the original description by Velenovsky in the *Flora of Bulgaria* as cited in the footnote. The plant is allied to P. glutinosa, and with its lanceolate entire leaves and clusters of reddish-purple flowers, is likely to be popular with growers of alpine plants. There are specimens gathered in Bulgaria at Pilo Dagh at altitudes between 4,000 to 7,000 feet by Mr. Elwes in June, 1899, and these specimens agree better with the description by Velenovsky than does the drawing sent us. The differences are however unimportant, except in so far that they show that the plant attains larger proportions than is shown in the sketch. *M. T. M.*

Messrs. Stansfield's note runs as follows:—

"Enclosed herewith we are sending you a coloured figure of a new Primula deorum (Velenovsky). This is quite a new plant of recent introduction and as soon as the plant is better known it is sure to become a popular plant among Alpine plant growers. There is no doubt as to its hardihood, coming as it does from the lofty Mount Rilo, in Bulgaria, where it is found growing at an elevation of 8000 feet.

In its native habitat it is found growing just below the snow-line. It is generally found in grassy Alpine pastures and near the numerous Alpine streams which are so common in all Alpine meadows. It must therefore have plenty of moisture, growing as it does with its roots always in water. The general appearance of the plant is somewhat like that of Primula Clusiana. The flower-stalks are thrown well up above the foliage, sometimes 8 to 9 inches in height, upon the top of which are borne a number of purplish-violet flowers of a most striking character; sometimes as many as twenty flowers are found to be produced at one time. On planting it should be given a north aspect at the base of the rock garden where the plant can get a double portion of the rains which fall upon the rock garden. *W. H. Stansfield, Southport.*"

Since the above note was written we have come across a note and figure from Mr. Hindmarsh, in *Flora and Sylva*, ii. (1904), p. 239. Mr. Hindmarsh obtained the plant in 1902, and planted it in sandy loam in the open rock-garden, facing north, and at the foot of a large flat-topped stone. It is quite hardy with Mr. Hindmarsh, as also with Mr. Max Leichtlin.

KEW NOTES.

PLECTRANTHUS CRASSUS.—This genus contains but few plants of horticultural value, but a species has been discovered at last that may claim to be a useful garden plant. The seeds of P. crassus were sent to Kew in February, 1902, by Mr. J. McClounie from British Central Africa. The species flowered for the first time under cultivation in November, 1903. The plants now in flower in the Begonia-house (No. 8) were grown from cuttings rooted in March of last year. Their habit of growth is quite distinct from that of most Plectranthus, which are usually much branched and bushy, whereas this species rarely branches naturally. The stems are erect, stout, and slightly woody at the base, having a height of $1\frac{1}{2}$ to $2\frac{1}{2}$ feet. The leaves are ovate, with a crenate margin, 4 inches long by $2\frac{1}{2}$ inches broad; pale green in colour, and rather pleasantly scented. The terminal spikes of labiate, lavender-blue-coloured flowers are from 6 to 8 inches in length, and $1\frac{1}{2}$ inch in diameter. A succession of flowers is maintained on the densely crowded cymose-whorls, which form the inflorescence for fully two months. Propagation should be by cuttings rooted in moderate bottom-heat, afterwards being grown on under cool conditions. Owing to its unbranched habit, it is advisable to grow three or more plants in a pot. This is one of the few flowering plants that does not appear to have been affected by the severe fogs.

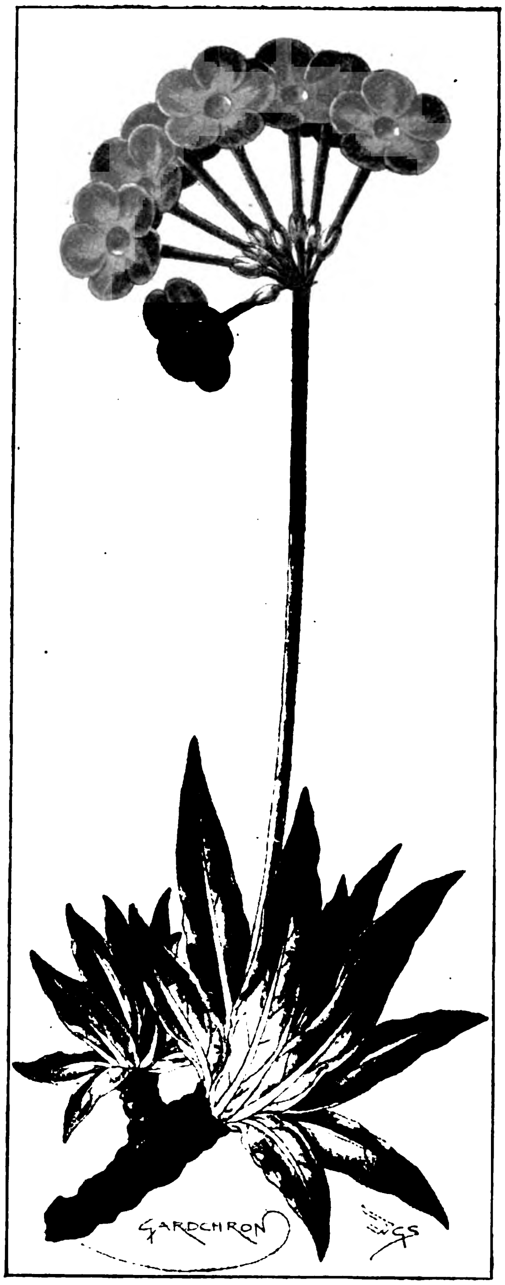


FIG. 44.—PRIMULA DEORUM: FLOWERS ROSY-PURPLE.

CYNORCHIS LOWIANA.

A fine pan of this exceedingly pretty terrestrial Orchid is now flowering in the warm Orchid-house; it has twelve inflorescences, each of which is carrying from three to six large flowers. C. Lowiana is a native of Madagascar, and therefore requires during the period of growth a stove temperature, but it should be rested in an intermediate-house.

The South African species, Cynorchis compacta, is also in flower in the cool Orchid-house. There are several pans, each with a profusion of elegant inflorescences, some 4 inches in height, with white, spotted flowers.

EPIDENDRUM ALLEMANI.

This delightful species is very little known in gardens. It is of the same section of Epidendrum as E. cochleatum, E. inversum. E. fragrans, &c., and is sometimes imported from Brasil under the name of E. Ionopsis. The plant has deep-green flasked-shaped pseudo-bulbs about 3 inches long, surmounted by two leathery leaves 9 inches long by 1 inch in breadth. The spikes of flowers are produced very freely; they are about 6 inches high, and have usually four to six flowers which are most deliciously scented. The individual flowers are $1\frac{1}{2}$ inch in diameter when first expanded; the sepals and petals are pure white, and remain so for about three weeks, afterwards turning cream-coloured. The lip is of pure white with a few rosy-red markings near to the column *W. H., February* 8.

THE SPECIES OF EREMURUS.

(*Continued from p.* 67.)

SPECIES AND VARIETIES.—*E. Bungei* (*aurantiacus*).—An old-time species, but still scarce enough to be called rare, and a border plant of sterling value, showing the greatest refinement in its symmetrical spikes of canary-yellow flowers. It has a black-brown root-stock, covered with a thick mass of coir-like fibre; long, wiry, thong-like roots form the usual cycle around the crowns, and the leaves exceed a yard in length and are arranged in loose, sedge-like tufts of a glaucous hue. The flower-spikes are 6 to 9 feet long, the upper third (sometimes half) being covered with a bristling array of pretty flowers, the petals of which glisten and the silky stamens bear orange-red anthers that look charming in contrast to the yellow of the petals. The flowers are so closely arranged that the pedicels are quite hidden when the spike is in full bloom, and one sees nothing but a silvery yellow cylinder bristling with myriads of anthers. The flowers are an inch in diameter, and the petals are rounded and often slightly recurved. It hails from Persia and flowers with us in July. A light soil and warm and dry resting season during early winter are very necessary for it.

Var. *præcox* is a slender and early-flowering form from Baluchistan, having but few roots, but these travel 3 to 4 feet distant from the root-stock, and they are coal-black in colour. The flower-spike is equally tall, but more slender, and the flowers open with those of E. himalaicus in June. They are smaller than those of E. Bungei, but similar in colour and less crowded in the spike.

E. himalaicus.—The common white Eremurus, now so widely planted, is a stately subject that one could use effectively in association with low shrubs, so that the tall brushes, often a yard or more long, may be seen just above the surrounding foliage. The roots are nearly black, and very numerous, having somewhat scarious cuticles, and the whole root system covers a square yard when well developed. The leaves are glabrous, deep green, 6 inches wide, and a yard long, and they form a rigid rosette till the spike flowers, when the upper third recurves. The spikes vary from 6 to 10 feet in height, and quite one-third of their length is covered with multitudes of pure white flowers, each an inch across, the bristling anthers interlacing freely, giving a sheen of silk to the inflorescence. They open in irregular circles, eight to ten ranks every day, and when the terminal foot of spike is reached the top keels over, so that a plantation of goodly quantity has a curiously tasselled appearance. The inflorescence is often more than 6 inches through, and various specimens differ in density of spike. It is quite an easy plant to grow, and there should be no difficulty in making it succeed where it would look best. A good friable soil that drains water freely will serve, and if specimens are annually top-dressed with leaf-soil and loam, six to eight spikes from each clump may be expected in a space of six years; for each strong spike is followed by two crowns, which in their turn, generally triennially, split into two again and again. *G. B. Mallett.*

---

* *Primula deorum.* J. Velenovsky, *Flora Bulgarica* (1891), p. 479.—"Perennis, *omnino glabra ad scapum superne et pedicellos valde glutinifera*; rhizomate crasso carnoso obliquo; foliis *carnosulo coriaceis*, viridibus, rosulatis sessilibus, oblongis basi leviter vel vix attenuatis breviter acutis integris vel apice pauci-dentatis, scapo, 3—4 plo brevioribus; umbella 5—10 flora sæpius unilaterali; involucri phyllis oblongo-linearibus pedicellis longioribus paucis basi non saccatis et inæqualibus, pedicellis calycem subæquantibus, calycis ad medium fissi laciniis triangulari-acuminatis; corollæ purpureo-violaceæ omnino glabræ tubo calyce triplo longiore laciniis tubo corallino tertia parte brevioribus; capsula ovoidea calyce non accreto inclusa. Floret Augusto. Folia 3—4 cm. × 5—8 mm.; scapus 6—10 cm., calyx 3—4 mm. longus; corollæ tubus 10—12 mm., limbus 13—15 mm.—In graminosis humidis inter nives ad fontes rivuli Cerni Isker summo M. Rilo. Planta colore et magnitudine florum, foliis læte viridibus subcoriaceis elegantissima. Rhizoma digito haud tenuius et folia sicca odorem gratum abietinum spirant. Scapus superne viscidus pedicelli et calyces sunt nigri. Umbella semper valde unilateralis fere subnutans. Species cum nulla alia comparanda sed ad affinitatem P. glutinosæ Wulf. spectans."

(*To be continued.*)

VEGETABLES.

ROTATION OF KITCHEN GARDEN CROPS.

(*Continued from p. 38.*)

THE last crops treated of were those of early and midseason Potatos (late Potatos, unless the garden is unusually large, should be relegated to the field). Towards the end of August or early in September, a large breadth of ground which has been under the above crops will be available, and without further cultivation or manuring, with the exception of clearing and forking the surface of the land, may be used for the reception of crops of Spinach for use in winter and the following spring, and of Turnips for autumn and winter supply. These crops should be sown as early as possible after the Potatos have been cleared, in order to allow them as long a period of summer weather as is possible in order to develop strong growth.

CELERY.

The crop I recommend to follow the Spinach and Turnips in spring is Celery. This allows the Spinach to remain on the land late into spring, an advantage which will be appreciated by those who understand the value of this vegetable at that season of the year when other vegetables are frequently scarce. Whether the old system of growing Celery in single rows, or the more modern and economical one of growing the plants in wide beds containing six or more rows of plants in a bed, be followed, the preparations necessary, if the highest success is to be attained, involve the adoption of intensive culture in its truest sense, and are equivalent in every way to ordinary trenching and manuring. In the first place, the soil in the beds must be dug out to a depth of a foot, and the bottom of the beds turned up to the depth of the spade, to ensure the earth being moved to a depth of at least 2 feet. In the bottom of the trench, after the digging is completed, a layer of good rotten manure should be laid at least 6 or 7 inches thick. This process, together with that of disturbing the soil to a good depth in the spaces between the beds when earthing-up the Celery, and with the subsequent digging of the land the following spring after the crop is cleared, prepares the ground as no other crop can do for Onions. Before leaving the subject of Celery, I should like to say that I have always endeavoured to have the Celery-beds formed as early in the year as possible, even before the young plants are ready for planting, because the ridges formed by the soil dug out from the beds offer excellent ground for the growth of Lettuce, French Beans, or other such fleeting crops as occupy the land for a short time, and are cleared away before the Celery needs to be earthed. In gardens where space is limited this effects a useful economy; and as regards results, the best Lettuces I have ever grown were produced in this way. *Owen Thomas.*

(*To be continued.*)

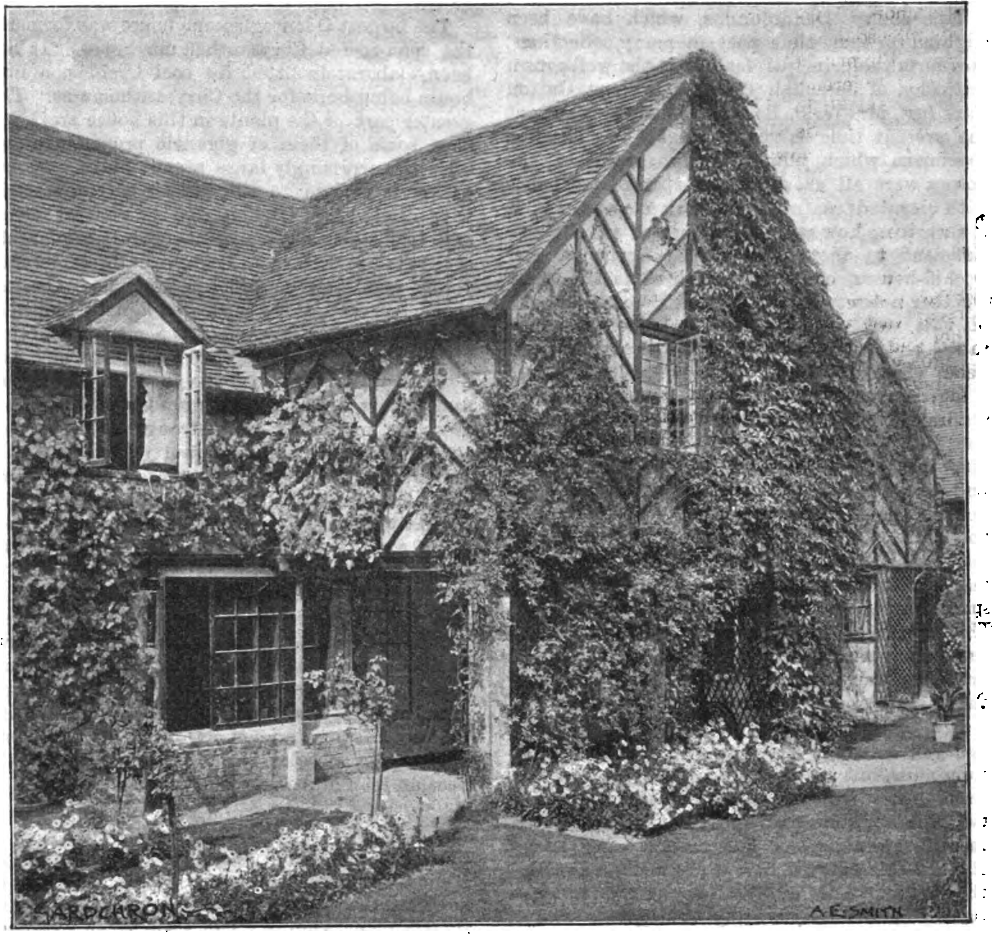


FIG. 45.—ODIHAM VICARAGE, HANTS, COVERED WITH VINES, CLEMATIS, AMPELOPSIS, &C.
(*From a photograph by F. Mason Good.*)

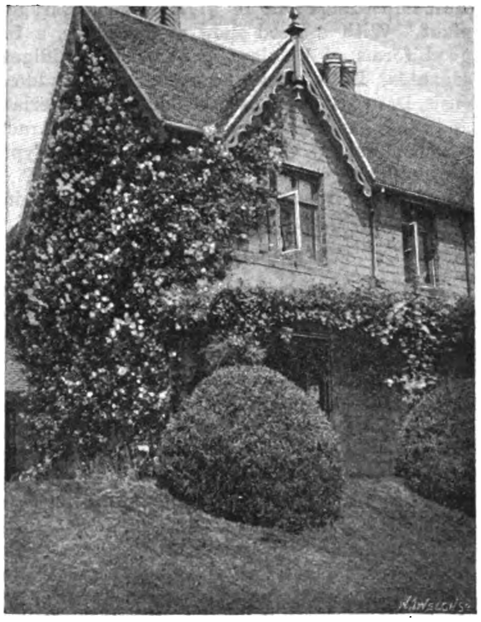


FIG. 46.—THE GARDENER'S COTTAGE AT LINTON PARK, NEAR MAIDSTONE.

COTTAGE-WALLS.

OUR late friend Edward Pynaert was wont to lament the circumstance that the residents in the Belgian country districts did not more frequently avail themselves of the walls and gables of their residences, which he spoke of as *pignons perdus.* In this country we do not think the complaint would have the same amount of justification. It is common enough to see a well-trained Pear-tree covering the walls of the gardener's cottage, and how many country rectories have we not seen which, like that shown in our illustration (see fig. 45), are made supremely beautiful by the use not of rare or costly creepers, but of such as are at the disposal of anyone! What more lovely drapery can be afforded than that furnished by the Wistaria, as figured in our issue for February 4, glorifying an otherwise plain frontage. Even suburban villas are lifted out of the commonplace by a veil of Veitch's Ampelopsis or variegated Ivy, though careful housewives object to the dust and dirt which accumulates on Ivy-covered walls, and to the shelter afforded to sparrows, mice, and other creatures, whose habits are not conducive to cleanliness. We have not space now to do more than indicate the wealth of material that is available for the purpose of wall-decoration or for more utilitarian purposes, but we cannot avoid alluding to the use that is made in the chalky districts of East Kent of Clematis mortana. We remember passing through one large village almost every house front in which was clothed from base to gable with this beautiful climber, which is not so common elsewhere.

In fig. 46 may be seen what a fine effect is obtained from Roses growing on the gardener's cottage at Linton Park, near Maidstone, in a garden which is famous for its fruit trees and for its magnificent trees and shrubs, many Conifers in this collection having been illustrated from time to time in these pages.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT GATTON PARK, REIGATE.

(*See Report of the R.H.S. Show*, p. 107.)

THE showy Dendrobiums, which have been slighted for some time past in many collections, now form the principal feature in the well-grown collection of Jeremiah Colman, Esq., at Gatton Park (gr., Mr. W. P. Bound), and their beauty at the present time is very remarkable. The fine specimens which now beautify several of the houses were all grown in one span-roofed house with elevated central wood-work staging, and it is surprising how such a number of plants, now sufficient to adorn the whole of the warmer Orchid-houses, could be contained in the space. Another noteworthy fact is that the greater part of this vast collection of Dendrobes has been raised and perfected at Gatton during the few years which Mr. Bound has been gardener there.

There are several significant points about the management of the Gatton Park collection. In the first place the customary Orchid-pan, or half-pot with holes in the sides, has been abandoned, and plants intended for suspending are grown in pots of the ordinary flower-pot shape, but with the addition of three holes below the rim to take the wire-suspenders. The pots are crocked in the customary manner, and for Dendrobes a sprinkling of fine crocks is added to the compost. The crocks are broken by a machine with a handle to turn like a grind-stone, and in an hour or so as many can be prepared as would have taken a man a day to break in the old way.

For the general run of Orchids one-fifth of decayed leaves is added to the peat and sphagnum-moss, but no leaves are used for the Dendrobiums, which are potted into a compost of two-thirds fibrous peat and one-third sphagnum-moss, a sprinkling of fine crocks being added. Beyond this there is little to be said, except that the golden rule of Orchid-growing, to grow briskly in a warm healthy atmosphere and to rest the plants dry and cool, is observed.

At the present time it is estimated that there are over 10,000 Dendrobium flowers in the collection. There are most of the best varieties of D. nobile, including the clear white D. n. album, and the richly coloured D. n. nobilius, still the best of its class. D. n. Dormanianum has pretty well-rounded flowers, and the blush-white D. n. Colmani is better in shape than its ally D. n. Ballianum. Some other fine forms of D. nobile are also present, procured from cross-fertilised seeds, and which seem to have reverted. Many hybrids of the D. × rubens and D. × splendidissimum class exhibit great improvement on the old forms. The flowers of many of these measure from 4 to 4½ inches across, and exhibit fine tints of rose and purple, with deep claret-purple disc to the lip. The best noted were D. × rubens Gatton Park variety, D. × r. Miroir, D. × r. pulcherrimum, D. × r. grandiflorum, D. × Ainsworthii Colmanii, D. × A. Gatton Park variety, D. × Artemis in great variety, D. × Othello Gatton Park variety, D. × Apollo grandiflorum, D. × Juno, D. × Wiganiæ, and D. × Wiganianum, both represented by several fine and dissimilar varieties; D. × Cybele, D. × Owenianum, D. × Curtisii, D. crassinode album, D. × euosmum, D. × Socius, D. × Snowflake (Cassiope × nobile albiflorum), D. × Schneiderianum superbum, D. × melanophthalmum, and many others. The growths of the stronger-growing are 3 to 4 feet in length, and very stout and vigorous.

Some of the intermediate-houses had a good show of Calanthe × Bryan, and C. × Wm. Murray, in addition to the Dendrobes; and among other things noted were the fine yellow Phaio-Cymbidium × Chardwarense; several Spathoglottis aureo-Vieillardi, and the variety aurea, raised at Gatton Park; and Epidendrum × Boundii (radicans × Buttoni), groups of which in several houses prove it to be one of the finest orange-coloured winter-flowering Orchids.

THE COOL HOUSES.

The largest Odontoglossum house was formerly the span-roofed Chrysanthemum house. It has been elaborately fitted for cool Orchids, a new house being built for the Chrysanthemums. The greater part of the plants in this house are large ones, some of them of gigantic proportions and all with surprisingly large pseudo-bulbs. Propagation is carried to the utmost extent possible with all classes of Orchids, and the general vigour and healthy character of the plants are largely attributed to this fact. Single bulbs often with young growths 2 or 3 inches long are unhesitatingly cut off to make separate plants if required, and nothing but success of the most gratifying kind has to be recorded of the process which the *Gardeners' Chronicle* took the lead in advocating some years ago. A large number of the specimens are producing very strong spikes. A few are in flower, including a pretty form of O. × Wilckeanum, very like a spotted O. crispum; also the beautiful Cymbidium grandiflorum punctatissimum, C. eburneum, Cochlioda Noezliana, some brilliant scarlet Sophronitis of the open-lipped militaris type; Masdevallia polysticta, M. triangularis, M. × Courtaldiana, and a few other Masdevallias; Odontoglossum Rossii majus, O. Cervantesii, &c. In one corner are about three hundred little seedling Odontoglossums. Although highly successful in raising most others, great difficulty was at first experienced with Odontoglossums, but success is now assured. One seedling Odontoglossum has a stout first bulb over an inch high, and others are following.

THE INTERMEDIATE HOUSES

contain an excellent collection of hybrid Cattleyas, Lælio-Cattleyas, and a very valuable selection of fine varieties of species. All are alike vigorous, though many were in a bad state when acquired. Mr. Bound's first operation after indifferent plants are acclimatised is to free the front, active portion from the penalty of having to carry the unhealthy back bulbs, and that he considers the most important event in giving a good start to a plant. With a good show of Calanthes, a few good forms of Cattleya Trianæ, C. Loddigesii gigantea, Lælia anceps Schroderiana, Waddoniensis, Dawsoni, Hilliana rosefieldiensis, Sanderiana and Stella, and others are in bloom; also Arachnanthe (Vanda) Cathcartii; and in the Cypripedium-house some of the best forms of C. × Leeanum, a remarkably fine C. Chamberlainianum, and others.

THE SEEDLINGS.

These are contained in a block of three span-roofed sunken houses, in one of which the seedling Orchids seem to be raised with the greatest ease, the space in the others being used for their growth in the earlier stages and until they pass into the general collection. Here are thousands of hybrid Dendrobiums, Cattleyas, Lælias, Lælio-Cattleyas, and many strange crosses, which were scarcely expected to be effectual. One of the most interesting is the result of crossing the white Diacrium (Epidendrum) with the widely different scarlet-and-yellow E. radicans. The habit of the plant is like a stout, close-growing E. radicans, and it has the same manner of producing air-roots up the stem. One is sending up a spike, so it will soon be tested. The collection of fine Nepenthes and the other things in this great and remarkable garden are also in excellent condition. *J.*

VANDA CŒRULEA.

A unique specimen of Vanda cœrulea was presented at the last meeting of the Société d'Horticulture de France by M. Marcoz. It resembles the ordinary type in all respects except the colour, which is of a charming rose-tint. There is only one other example extant, which is believed to be in the collection of Baron Schröder. The present example received a Certificate of Merit, and the name of "Souvenir de Mr. Bos." *D. M.*

POTATOS.

WARTY POTATO DISEASE AND LIME.—Just prior to planting on mounds 4 feet apart a quantity of selected large tubers of some twenty-five new and old varieties of Potatos, I mixed with the soil of each mound a pint of fresh unslacked lime, broken fine. Out of thirty mounds, each having a single plant, one gave the whole of the tubers badly affected with what is called the warty disease. That was a tuber of Vermont Gold Coin. A second tuber of the variety from a different source gave clean produce. Obviously the first-named tuber must have been diseased before it was planted, though perhaps to a slight extent and unnoticed. It might be said that it was the lime application which kept the other twenty-nine plants and produce healthy. Were that so why not the thirtieth also? I fear lime is not in such case an infallible preventive. *A. D.*

POTATO-RAISING.

Mr. Findlay, in a lecture on the development of new breeds of Potatos, recalls the fact that the production of fruit "plums" and seed in Potatos was at one time much more common than it is now, when Potatos are much more often grown for their tubers rather than for their flowers and fruits. Mr. Findlay does honour to the memory of Paterson, and goes so far as to say that he would not give a farthing for any Potato if he could not trace its descent from the Victoria, either on the male or the female side. Speaking of alleged crosses with Up-to-Date, Mr. Findlay doubts their existence, as its flowers when produced are sterile; indeed, he says "it is an utter impossibility for anyone to have got a natural seedling from it." The great Potato-raiser even goes so far as to say that he is "distinctly of opinion that natural cross fertilisation never took place in any part of the world at any period of the world's history." As to the raising of seedlings when obtained, Mr. Findlay describes his method as follows:—

"First, I get a shallow seed-pan, attend to the drainage, fill it up, or nearly, with well-decomposed leaf-mould, to which has been added a little fine sand. I take a flat piece of wood, and beat it down fairly firm and level, and sow the seeds thinly and evenly over the flat and firm surface. That done, I take and sift, after adding more sand, some more of this leaf-mould. The sifting will remove all grit and stones. Now sprinkle a small portion over the seeds, but see that you do it evenly and not over-thick—as near to an eighth of an inch as you can; give also a slight beat down. If the mould is fairly moist, you need not give any water for at least two days. Set your tray, to be out of the way of mishap, into the sunny corner of a cold frame. Put a piece of old newspaper or other paper over the tray, covering up with a piece of glass. Your great care now is to see that you do not allow the earth or mould to get dry; at the same time you must guard against making it too wet. In a week or ten days your seed should begin to braird. You must then give them more light and air. With average care, in a very short time you will have nice plants. When about an inch high, put them out in small pots singly. In another three weeks or so, if the weather is suitable and the season far enough advanced, plant them out in the open where you mean them to be permanently. After this, your work is all in the ordinary course; only remember this, you must take care when you harvest them to keep the produce of every plant by itself—I mean those you intend to grow again. Fifty per cent. or more will be of no use to go further with; and this 50 per cent. left year by year you, if wise, will further reduce, until at the end of four years you have only one or two left as the sole representatives of your labour and care."

Continuing, Mr. Findlay remarked "that the raising of new varieties of Potatos possessing extra good productive powers was brought about by judicious selection of the parents, and not by promiscuously crossing one plant with another."

CHRYSANTHEMUMS.

New Continental Varieties. — We are rapidly approaching that season of the year when the French raisers of new Chrysanthemums place upon the market their novelties of the previous autumn. The practice nowadays differs somewhat from that observed by the former generation of growers, for the new varieties are generally those that have been submitted to some competent tribunal for adjudication. Hence, allowing for differences of taste and peculiarities in the standard of excellence, the novelties come to us from France now with a kind of hall-mark that was never the case in the days when Simon Delaux, Louis Lacroix, De Reydellet, and other growers of twenty years ago were the providers.

How far this is an advantage the importer must judge for himself. In the olden time there was a great deal of weeding out required, and even now it is more than whispered that the process of selection is as necessary and as severe as it ever was. Tastes differ even in Chrysanthemums, and it is certain to my mind that in this respect the English and the Gallic taste will never be always in accord.

As for the flowers, it is evident that we owe to M. Ernest Calvat a debt of gratitude for a higher average quality, and up to the present he may justly be considered *facile princeps*. But no grower, either seedling raiser or cultivator for show, can hope to maintain for long an undisputed supremacy.

When last in Paris I was not therefore surprised to find that a new competitor had entered the lists, and with startling results. The Marquis de Pins exhibited a fine collection of big heavily-built novelties that were awarded the highest honours, and of these we certainly formed the highest possible opinion. That they would be introduced into this country we felt no manner of doubt, and during the past autumn we anxiously looked for them at our trade collections. For some unaccountable reason and in some mysterious manner the De Pin's seedlings failed to respond to our expectations, and yet we have it on good authority that at the last Paris Chrysanthemum show the novelties shown by this new raiser again took the highest number of first-class certificates and were awarded a medal of honour, these distinctions being conferred by two different bodies—the certificates by the Floral Committee of the National Horticultural Society of France, and the medal of honour by the jury on the day following.

Pressure on our space prevents any enumeration of these novelties. They will be found, with descriptions, in the *Journal* of the National Horticultural Society of France for November, 1904, and selections and appreciations of them from a French point of view in *Le Jardin* by M. Gaston Clément and M. A. Maumené.

Other raisers who have gained new seedlings worthy of commendation are Messrs. Aug. Nonin, De Reydellet, Héraud, Dolbois, Cavron, Rozain-Boucharlat.

A special note is necessary in the case of a new sport called Madame Guillaume Rival. This is a yellow counterpart of Madame Paolo Radaelli, from which it originated. *C. H. P.*

PELORIA IN ORCHIDS.

It is not infrequently the case when matters become involved beyond hope of disentanglement that we have to extricate ourselves by going back to first principles. So the flower of an Orchid, as we generally see it, is a highly complicated structure, but every now and then we come across flowers which, if they are not actual reversions to an ancestral state of simplicity, are at least suggestive of such a condition. This is the case in a flower of Cœlogyne cristata obligingly sent us by Mr. George Paul. The reduction of the perianth to two whorls of two each, as shown in the illustration (fig. 47), is very common, so is the absence of the lip. Co-related with this condition we have a simpler form and a straighter direction of the column. This peloriate flower was one of several on the same spike that were normal.

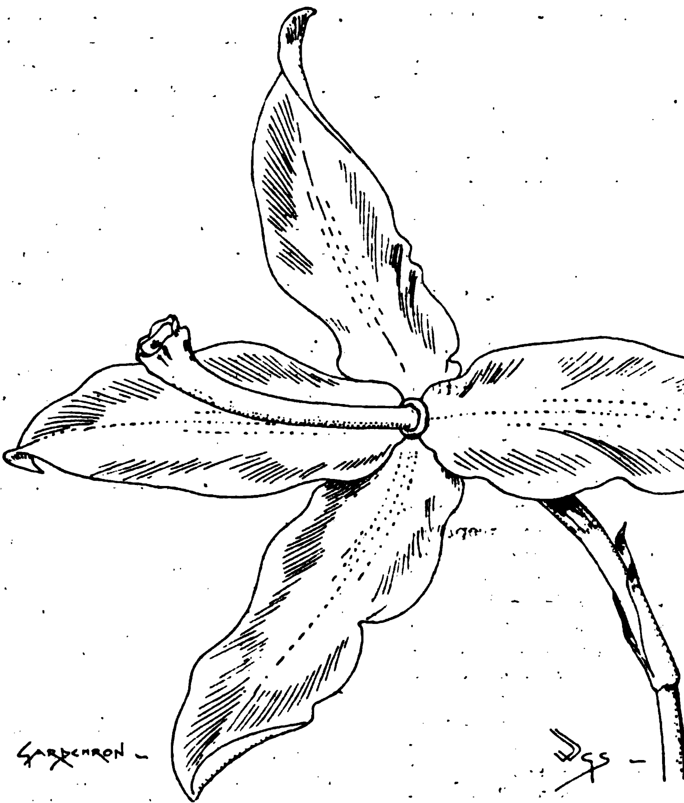


FIG. 47.—CŒLOGYNE CRISTATA: REGULAR PELORIA OF FLOWER WITH DIMINISHED NUMBER OF SEGMENTS, &C.

THE ROSARY.

"THE BOOK OF THE ROSE."*

It is not necessary to occupy much space with eulogy of a book in its third edition. The Rose public has confirmed our judgment when we said that the author was justified in calling his work The *Book of the Rose*, and indeed, with the necessary limitations and qualifications, it remains so. What gives a special significance to the present edition is the lamentable fact that we shall have no further communications from the author's pen. The preface to this third edition is dated no longer ago than November, 1904, and very shortly afterwards the author died. His work here was finished—finished before his friends could have expected it to be. A better memorial to him could not be afforded than this one erected by himself and acclaimed by all rosarians.

FRAU PETER LAMBERT.

A hybrid Tea descended from crosses made between Kaiserin Augusta Victoria × Testout again crossed with Madame Abel Chatenay. The coloured plate in the *Rosen Zeitung* for December shows a Rose resembling La France or Mrs. W. J. Grant.

FORESTRY.

THE SESSILE-FLOWERED OAK.

Sir Herbert Maxwell's note (see p. 82) on this tree refers to me as one of those recommending it for dry ground, apparently implying that its success under the opposite conditions as regards moisture contradicts my view of the sylvicultural value of the tree. All I have done, however, was to note the limited growth of this tree on dry ground, as compared with that of the pedunculate variety. The respective merits of these two varieties on wet ground, or rather ground usually associated with Oak, I do not profess to know much about. But wherever I have seen these two trees on dry sands or gravels, I have noticed the more vigorous growth of Quercus sessiliflora, and that it is much less liable to get stag-headed, or to throw out water-shoots than the other, which is evidently more exacting in the way of soil or climate. *A. C. Forbes.*

NOVELTIES.

"WOOD-MARKING PENCIL."

Under the name of "Holzmarkerstift," Messrs. Wolff, of Wevelinghofen, Germany, send us an anilin pencil intended for use on wooden tallies. The inscription made by an ordinary anilin pencil is very apt to "run" when it is used on the moistened surface of wood or paper, and the inscription is liable to be effaced by wet and the agency of the weather. These defects are largely overcome by the use of the pencil which Messrs. Wolff have sent us for trial. They enclosed an oak tally written by themselves of which we have tried to efface the inscription, but without success: and we have ourselves used the pencil on various woods, and find that, given the right sort of wood, the use of the pencil bears out the makers' recommendations. On a polished surface it is not so effectual as on a rougher tally.

---

* By the Rev. A. Foster-Melliar. 3rd Edition. (Macmillan & Co.)

THE CASTLES OF DEAL AND WALMER.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE historic buildings represented in our Supplementary Illustration are probably well known, at least by name, to most of our readers. Walmer Castle has for centuries past formed the residence of the Lord Warden of the Cinque Ports, the head of that historic assemblage of corporations to which was delegated the defence of that portion of the coast in which they were situated, the barons, as their freemen were called, receiving in exchange for service rendered concessions which have been gradually abolished, until but vestiges remain. The last of these privileges to be taken from them is the residence among them of their Lord Warden, for since the serious illness of Lady Curzon, and since the preparation of our illustration, the powers that be have declared the Castle to be unsuited to modern requirements, though why the defects cannot be remedied by suitable structural alterations we fail to see, for many another old building has had to meet the requirements of modern bye-laws and sanitary authorities.

Walmer Castle, together with its neighbour at Deal, and one which existed still further to the north-east, named Sandown Castle (now in ruins), were built by Henry VIII. for the protection of this part of the coast. They were all built on the same plan, and the view of Deal Castle seen at the top of our illustration serves as a good general view of all three.

The most important, from a garden point of view, is the one at Walmer, long the residence of the Duke of Wellington, and in one of the rooms in which he died. Of this Castle we subjoin a few interesting particulars. The Castle is fully exposed to the sea, and the guns which now repose so peacefully on the ramparts command a full sweep of the historic roadstead named the Downs, which are rendered a safe anchorage for ships by reason of the natural breakwater on their eastern side formed by the dreaded Goodwin Sands.

The lawn seen in the foreground of our picture is but a 100 yards or so in width, and separates the building from the beach and sea. The environment of Walmer Castle is especially striking, for in addition to the magnificent seascape, some good land scenery obtains in the immediate neighbourhood, a spot on the land side known as The Glen being charming, while the view seen from Hawk's Hill, an elevation adjoining the south end of the Castle grounds, is most picturesque. The policies of the Castle are extensive and well wooded, but the prevalence of cutting easterly winds, especially in the spring-time, has told injuriously on the vegetation, especially in the unsheltered parts of the grounds. The lawns are studded with trees of historical note, by reason of having been planted by historical men—among them a grand specimen of Lime, planted by William Pitt, while close by is a Tulip-tree (Liriodendron tulipifera) planted by his rival, Fox. Another is a Willow raised from a cutting which the great Duke obtained from Napoleon's grave at St. Helena. Higher in the grounds is a paddock, in which there are some fairly good groups of Conifers, including a good example of Cedrus Deodara and of Abies Pinsapo. The view from this part of the grounds is very fine, and lends itself to further development. The park is broken up very pleasingly by groups of evergreens, among which some clumps of Evergreen Oak are really excellent features. Arbutus Unedo also flourishes well in this part of the grounds.

The old moat has been laid out with shrubberies, and the walls with a south aspect have been planted with trained fruit-trees, principally Pears.

Our view of Deal Castle shows the trees whose growth has reached the highest limits of the ramparts from the moat. The large specimens of Fig-trees which luxuriate in the old moat and annually produce crops of excellent fruit should be noted. One of these trees at Walmer Castle, of the old Brunswick variety, and near to the main entrance, has rooted into the walls, evidently deriving its nourishment from the chalk with which the walls are encased, the lower portion of the tree being quite dead.

The kitchen and fruit gardens at Walmer Castle are extensive and are necessarily well protected by high walls and wind-breaks; there are also some excellent Yew hedges protecting the herbaceous borders. The walls on the sea side are covered with Irish Ivy, which is very well kept. Our illustrations are from photographs by Messrs. Franklin & Son, Deal.

The office of Lord Warden, as announced since our illustration was prepared, will in future be held by H.R.H. The Prince of Wales, whilst Walmer Castle itself will, subject to certain restrictions, be open to the public.

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Peaches.—In houses where the fruits are beginning to swell freely the temperature may be raised to 55° or 58° at night, syringing the trees freely twice on bright days, but once only on dull or cold days. If a good crop of fruits has set, remove first all those that are on the underside of the shoots, leaving sufficient on the top and sides of the shoots to furnish a crop. Disbudding should be done by degrees at intervals of a few days, according to the amount of vigour possessed by the trees; the more vigorous the trees may be, the more freely may the young shoots be removed. Weak-growing trees should be encouraged to make growth by the exercise of more patience in carrying out the work of disbudding, in order not to cause a check to the tree. No more shoots should be allowed to remain permanently than are necessary to furnish the trees. Afford liberal supplies of tepid water to healthy trees as soon as the fruits have been thinned, as it is almost impossible to over-water Peach-trees growing in well-drained, inside borders. Where the trees are of considerable age, loosen the surface soil by means of a fork, and apply a mulch. In watering such trees apply diluted liquid-manure, and occasionally a sprinkling of Kirk's Vine Manure according to the directions issued with this manure, which I have found to be excellent for all fruit trees. Vigorous-growing young trees must be given no stimulants or the growth will become gross and unfruitful. If green-fly makes its appearance the trees may be fumigated lightly, care being taken to ensure that the foliage is quite dry before this operation is commenced.

Succession Peaches.—Houses that were closed at the beginning of the year should be kept well supplied with atmospheric moisture by syringing and damping the floors, &c., as often as the condition of the weather outside renders this necessary. The temperature at night should be 50° while the trees are in flower, and a free circulation of the air in the house is necessary, syringing being discontinued for a time. Peach-flowers generally set freely enough on healthy trees, but it is safest to pass a brush or rabbit's-tail over the flowers every day at noon.

Houses containing Later Trees may be ventilated night and day in order to retard the trees as long as may be necessary. Afford water freely to the roots if they are growing in inside borders. Keep the trees free from Aphis, and as soon as the flowers begin to expand employ a little warmth in the water-pipes.

Late Vines.—Vines which were cleared of fruit in December or early in January should by this time have been pruned, the houses in which they are growing should have been cleaned, and the borders top-dressed. These houses should be kept cool, and the Vines allowed complete rest. Such varieties as Gros Colmar and Lady Downes require a long season of growth, and should not be started later than the middle of February. The best time at which to apply artificial heat in these houses is the commencement of the season. This can be discontinued later if the summer proves hot and dry. The growing points of strong young Vines should be brought down to a horizontal position or even lower, in order to encourage the Vines to break evenly.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

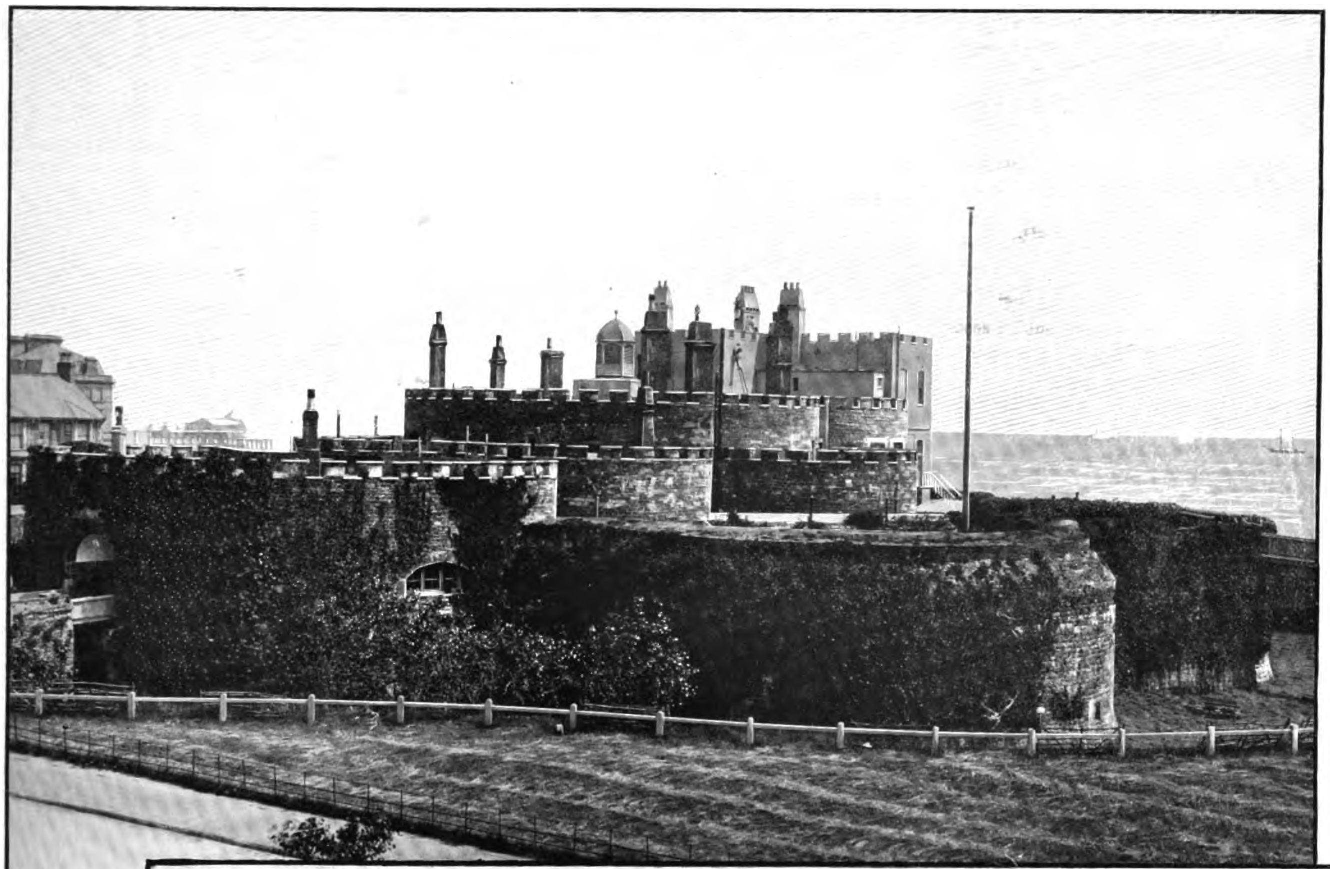
Thunias require potting annually, and as soon as the new growths develop from the old leafless stems this work should be accomplished without delay. Prepare a compost of two parts peat, one part each of fibrous loam and moss, a sprinkling of dry pulverised cow-dung, and some sand and small crocks to allow of proper aëration. Carefully remove the old potting material from the roots, also any of the roots that are dead, after which one or more of the pseudo-bulbous stems should be placed in position in their new pots, which should be rather more than half filled with drainage material. Tie the stems to a central stake, and fill in with the compost to near the rim, arranging the bases of the new growths just beneath the surface. Place the plants in a light part of the East Indian-house, withholding water at the roots until the new roots have entered well into the soil; they should, however, be sprayed overhead once or twice during the day on all favourable occasions, and the atmosphere should be kept moist by damping the surroundings. As growth advances increase the supply of water at the roots, and when the plants are approaching the flowering stage afford water in abundance, after which period they should be gradually inured to drier and cooler atmospherical conditions, but still be allowed plenty of water to the roots. When midsummer arrives the plants may be stood outside and allowed full exposure to sunlight. Propagation may be effected by removing half of each of the old stems and almost severing the removed portion between every other node, and then laying them on a damp surface in a warm house. When new growths are produced, insert the cuttings in small pots with a portion of the old stem attached, and grow them on in a brisk heat.

Ventilation.—The disparity between day and night temperatures at this season is often very great, frosty nights being followed by bright sunny days, with perhaps piercing cold winds. Under these conditions great care is needed in guarding against sudden fluctuations of temperatures inside the houses. The practice of damping should be general in the morning, and if the houses require it, the process may be repeated in the afternoon. Ventilation during windy weather should be confined solely to the wall ventilators on the sheltered side of the houses.

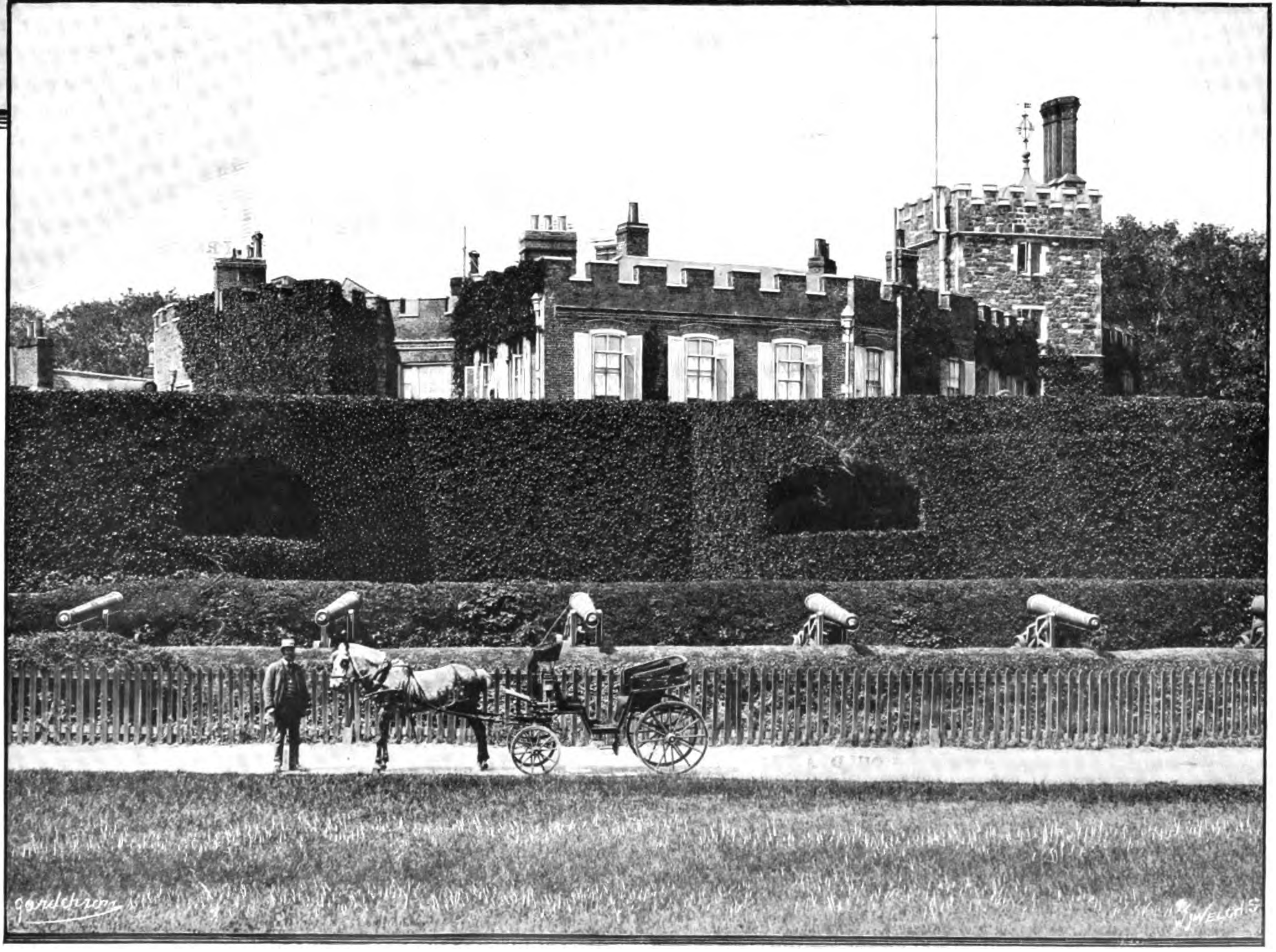
THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

The Rockery.—The arrangement of the stones should be on natural lines, and with the object of obtaining suitable positions for all classes of alpine plants. A soil containing a good proportion of humus will be the more suitable for general planting, but for special subjects special composts will be necessary. See that the soil is made firm, and do not allow any spaces to remain unfilled with soil. In some places retaining walls are necessary. These if built at a slight angle and with some prepared soil spread on each course of stone, can be made interesting by planting as the work proceeds many desirable alpines, or small plants can be dibbled in the crevices after the wall is built. Plants suitable for this purpose, and that will thrive in sunny fissures of a wall-garden include Achillea argentea, Androsace lanuginosa, A. sarmentosa, Antirrhinum glutinosum, many Campanulas, Cistus in variety, Cyananthus lobatus, Dianthus, Saxifraga longifolia, Sedums, Sempervivums, &c.



DEAL CASTLE, THE OFFICIAL RESIDENCE OF LORD GEORGE HAMILTON, SHOWING FIG AND OTHER TREES GROWING IN MOAT.



WALMER CASTLE, THE RESIDENCE OF LORD CURZON, LORD WARDEN OF THE CINQUE PORTS.

Many annuals and spring-sown perennials are also suitable for wall-gardens, such as Anagallis Phillipsii (with flowers of gentian-blue colour), Saponaria ocymoides, Sedum cœruleum, Corydalis thalictrifolia, Alpine Poppies, Lychnis Haageana, &c.

Roses.—Should spring planting have been decided upon, prepare the beds for the purpose by incorporating into them some good loam obtained from the surface of an old pasture, and a good dressing of stable-manure. See that thorough drainage of the bed is provided. The work should be performed in dry weather, and when the soil is in a suitable condition. The habit and vigour of each variety should be taken into consideration when planting, and distances allowed between the plants accordingly. Measure and mark off the stations allotted for each plant. Prepare suitable holes for the reception of the roots, and place some fine soil among the fibrous portions, but on no account apply fresh manure. When planting dwarf-growing varieties, allow the point of union between stock and graft to be buried 1 or 2 inches below the surface of the soil.

Lawns that still require manuring should have the manure applied without delay. Remove moss, if present, with an iron rake, and top-dress with some fine rich soil containing lime. Level any inequalities of the surface, and use the roller on all favourable opportunities.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq.,
Copped Hall, Epping, Essex.

Propagating Stove Plants.—Steps should now be taken to proceed with the propagation of fine foliage and stove flowering plants in good earnest. Writing upon this subject, a remark with regard to a pest commonly known as "mite," described some time ago in the *Gardeners' Chronicle*, may not be out of place. This I believe to be responsible for many failures in the culture of tender plants. It does its work so effectually before the mischief is discovered that every opportunity should be taken to preserve the plants perfectly free from the pest. Immerse cuttings of plants of tender growth in a solution of "Quassia Extract," and allow them to remain for some time before inserting them in the cutting-pots. Growing plants can be dipped in the same liquid at regular intervals as was recently advised for Jacobinias. Batches of Clerodendron fallax, Allamanda neriifolia, and Dipladenia boliviensis, if propagated now, will make a bright and useful display towards the end of summer. Seeds also of Clerodendron fallax should be sown at this time singly in pots, and raised in heat. These will make much finer plants than those raised from cuttings, and will flower later.

Caladiums having remained dormant through the winter should be examined. Shake away the old soil from them, and repot them in a rich compost consisting of three-parts good fibrous loam, one-part peat and one-part of dried well-broken cow-manure, to which should be added sufficient broken charcoal and silver sand to keep the whole sweet and porous. The corms should be placed moderately deep in the pots on a layer of silver sand, and the soil pressed firmly round them with the fingers to within an inch of the surface of the pot. Do not use a potting-stick. They should be placed in a Cucumber-house or similar structure where plenty of heat and moisture are maintained. Afford very little water until the soil is well filled with roots. Very fine plants may be obtained by liberally feeding and potting-on the plants, but to obtain very large specimens the strongest corms should be selected.

Tuberous-rooted Begonias.—Shake the old soil away from the tubers, and lay them bottom upwards in boxes on a layer of sand or finely-sifted leaf-soil. Then place the boxes in a house having an intermediate temperature, and lightly syringe them. By this method no water can lay in the hollow of the crown of the tubers, but they should be examined frequently, and potted when growth and root-action have fairly commenced. Seeds of tuberous-rooted Begonias and Gloxinias should be sown without delay. Great care will be required in this operation. Finely-sifted old potting soil should be used, and well-drained pots or pans. If the soil is moderately moist at the time of sowing, water need not be applied for the present. Fill the receptacles with mould to the top, and firmly press the surface before sowing the seeds. After the seeds are sown the surface of the soil may be gently pressed by means of a smooth piece of wood. Glass should be placed over the pans to preserve the seeds from drip and insects. Place the pans in a warm-house for the seeds to germinate.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge
Park, Wantage.

Seed Potatos.—Tubers selected for this purpose are usually those that are of insufficient size for culinary purposes. Every individual "set" should be furnished with a short, strong sprout, or even two sprouts, before being planted. This is of equal importance both for early and for main crop varieties. In order that these may develop, the tubers should be placed in boxes or in trays; a convenient size for these latter is 2 feet 6 inches in length, 18 inches in width, and 4 inches in depth; and they should be made so that they can be piled on top of one another, with spaces between each tray to allow the light to reach the tubers. The seed tubers should be stored in a cool, airy place from which frost can be excluded. The eyes will soon commence to sprout, of which all but two of the stronger on the upper end should be removed.

Soil for Potatos should always be in a state of good cultivation. The most suitable is that which has been well manured the previous season, and early in autumn was turned up and afforded partially-decayed leaves. At the time of planting our Potatos we apply lime freely, and soot is applied during the growing season. The selection of varieties should depend in a great measure upon locality; some varieties succeed well in one district and some in another. Here, last season, the varieties Improved Ashleaf, Duke of York, Early Puritan, Up-to-Date, and Northern Star produced abundant crops of good quality.

Storing Root-crops.—Onions stored for late use should be placed in an open shed, preferably behind a north wall. Turnips (if stored), Carrots, and Beet-root should all be examined—a work that can be performed in bad weather.

Tomatos.—Sutton's Winter Beauty is an excellent variety for fruiting in winter. Tomato plants are now benefiting from the effects of the lengthening days, and the flowers will soon be opening freely. In the morning, when the atmosphere is dry, tap the individual plants in order to pollinate the flowers, and maintain a moderately-dry atmosphere with a free circulation of air at a temperature of 60°. Keep the roots of the plants only moderately moist. Young plants raised from autumn-sown seeds should be given a position in a light, well-ventilated house. As growth proceeds repot the plants in 8 or 10-inch pots, using a light, porous compost, warmed to the temperature of the house.

Parsley.—Where hard daily pulling is the practice through the winter months, even where good provision was made at the proper time, the stock becomes almost exhausted in the new year. Upon clearing ground some weeks back of this herb the large roots were lifted, plunged in a mild hot-bed, and are now furnishing Parsley in considerable quantity. Seeds may now be sown on hot-beds or in boxes in warm fruit-houses. The seedlings will be useful for transplanting in sheltered open positions, when large enough to handle. A good variety of Parsley should be obtained by carefully selecting the seed from the best plants.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden,
Aston Rowant House, Oxon.

American Blight or Woolly Aphis on Apple-trees.—The affected part should be scraped with a knife and all dead and decaying bark removed; next apply a few drops of coal-tar essence in hot water, well scrubbing the wound with it; this will destroy the insects. In order to prevent future attacks, work into every crevice or hole some warm colza oil, using a stiff painter's brush for the purpose.

Pear Maggot.—If trees were attacked with the Pear midge last season, remove the surface soil to the depth of 3 inches and burn it. If a large number of trees has to be done this operation would be a long one. The larvæ bury themselves in the ground and soon become cocoons. Many of these may be destroyed by frequently hoeing the ground under the trees, or a heavy dressing of kainit or sulphurated lime may be applied. This will furnish food to the trees as well as kill the insects. The same application may be employed with much success for trees planted on grass.

Codlin Moths may be discovered secreted below the bark of old trees; if not previously done this should be scraped off and the trees sprayed, limewashing the trunks with wash in which sulphur has been mixed. Small pieces of Linseed cake placed in 60-sized pots and just covered at the base of the tree will serve to capture many. The traps should be examined frequently, inserting the whole in a bucket of water so that none of the moths may escape.

Strawberries.—Commence preparation for making new plantations by trenching the ground, working in two layers of manure, one at the bottom of the trench and the other between the first and second spits. If the subsoil is of a poor description do not bring it to the surface, but if it is heavier than the staple soil, the shovellings from the bottom of each trench should be thrown up, for the finest Strawberries are produced upon soils of medium stiffness. Strawberries require firm soil, therefore the ground should be prepared a considerable time before the plants are put out that it may thoroughly settle. In gardens where late forced plants are usually planted out, the ground prepared as above recommended will become firm by the time this work will be commenced. Forced plants put out in summer are preferable to spring planting if the latter plants are allowed to fruit in the first season, when they should be building up strong crowns for the ensuing season. If space is very limited a crop of early Potatos may be raised on this ground, which, being so heavily manured, will not be impoverished by such a crop. The Potatos should be lifted by July, and the earliest Strawberry runners, which have been layered in small pots or turves, planted out immediately, choosing showery weather if possible for the purpose. Examine old plantations, and if the birds have scratched the manure over the crowns remove this and expose the crowns. On rich land a slight sprinkling of salt may be applied, repeating the operation when the fruits have set.

Protecting Fruit Blossoms.—Buds upon Apricot-trees have pushed considerably, therefore have protecting material in readiness, and if any tapes and rings require to be sewn let this work be done at once. A clumsy but effectual way of making a protector for fruit-blossoms upon an individual tree is to tie together a quantity of hay bands so as to form a net. In an old garden of note this system has been successfully practised for many years. Glass copings are better left down at present, as their use would tend to hasten the buds.

THE APIARY.

By Chloris.

Entrances, &c.—Keep the entrances so that only one bee may pass at a time, and keep them clear of dead bees. Should a very bright day come, and the bees are flying thickly, then the body-box may be lifted from the floor-board, and this latter be well cleared of *débris*.

Take Stock.—Most of us leave this too late, or forget our wants until the honey-flow is on. To avoid disappointment it will be well during this slack season to ascertain our needs, and order the materials at once of any of the respectable manufacturers. Having received the goods we may then fit up frames with whole sheets of foundation, and thus be ready for the swarms; also fit up the section-racks. How many of us can recall the times we have vowed to have everything in readiness for swarms! The result of neglect is often that foundation is not firmly fixed, and if the weather becomes hot it slips, and brood is destroyed.

APPOINTMENTS FOR THE ENSUING WEEK.

FRIDAY, FEB. 24—Royal Botanic Society Meet.

SALES FOR THE WEEK.

MONDAY and FRIDAY NEXT—
Hardy Border Plants, Azaleas, Roses, Liliums, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY, NEXT—
Azaleas, Rhododendrons, Palms, Roses, Herbaceous Plants, Lilies, Perennials, &c., at 67 and 68. Cheapside, E.C., by Protheroe & Morris, at 12 —1,354 cases Japanese Liliums, Davallias, Iris. Pæonies, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 3 o'clock.—At Stevens' Rooms at 12.30 P.M., Roses, Lilies, Azaleas, Rhododendrons, Palms, &c.

THURSDAY and FRIDAY NEXT—
Final Clearance Sale of Nursery Stock at Hassocks Nursery, Hassocks, Sussex, by Protheroe and Morris, at 12 o'clock.

FRIDAY NEXT—
Imported and Established Orchids at 67 and 68, Cheapside, E.C., by Protheroe and Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —39·8°.

ACTUAL TEMPERATURES :—
LONDON.—*Wednesday, February* 15 (6 P.M.): Max. 51°; Min. 46°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 16 (10 A.M.): Bar., 30·3; Temp., 50°. Weather—overcast and dull.
PROVINCES.—*Wednesday, Feb.* 15 (6 P.M.): Max. 48°, Guildford; Min. 45°, N. of Ireland.

The Gardeners' Orphan Fund. IT is to be hoped that the warning note uttered by the Chairman, Mr. May, at the Annual Meeting held on the 10th inst. will be so earnestly heeded that at the next annual meeting less anxiety may prevail. Everyone admits that the objects of the charity are excellent, and at no time have we heard any complaint as to its administration, and yet the miserable tale has to be told that this year the Society could not, with due regard to its existing responsibilities, place one-half of the number of eligible candidates on the pension list. This circumstance is, perhaps, not surprising, however lamentable it may be, as a similar incapability occurs in most societies of the kind. What strikes us as more deplorable is the fact that the annual income from subscriptions does not increase, that the regular subscribers are falling off, and that their places are not filled, as they should be, in a higher proportion. It may be said that at the annual dinner the deficiency is made good. So it has been in the past, and so we hope it may again be; but a precarious and uncertain source of income is by no means so satisfactory as an assured revenue from regular subscribers. It is not spasmodic generosity that is wanted so much as the systematic performance of duty. It is humiliating to feel that we have to depend on the charity of the benevolent when we ought to be able by our own exertions to meet our obligations either to those who in their declining years need our assistance, or to those helpless ones who in the beginning of their lives have been deprived of their natural protectors.

Hitherto it has been the practice, at the discretion of the Committee, to allot to the guardians of the most necessitous of the unsuccessful candidates at each election a small sum (2*s*. 6*d*. weekly) as a gratuity until, by gradual accretion of votes, the orphan succeeds in securing election to the full benefit of the fund. We were told on Friday last that unless the annual subscriptions were augmented this practice might have to be curtailed or even discontinued; so that, instead of coping with the distress in our ranks, we should actually be doing less than our predecessors. That we must, and as we think ought to, look to our own community rather than to outsiders is shown by the fact that a special appeal made to a large number of ladies supposed to be interested in gardening, and whose sympathies, it might be presumed, would go out to the orphans, resulted in the receipt of a sum not much more than sufficient to pay the expenses connected with the issue of the circular. Surely it is only necessary to lay these facts before the gardening public to secure a largely-increased revenue for the Royal Gardeners' Orphan Fund!

THE VEITCH MEMORIAL TRUST.—At a meeting of the Trustees, held on the 9th inst., it was resolved that the sum of £50 be presented to the Trustees of the Lindley Library for the general purposes of the Trust. A Bronze Medal and £5 are also offered for competition at the Royal Caledonian Horticultural Society, on September 13 to 15 next, for six dishes of fruit, flavour and quality to be the primary consideration. A similar prize and medal are to be awarded for the three most distinct kinds in any one of the exhibits of vegetables, the object being to reward superior cultivation. Silver medals are also offered for improved methods of packing and transmitting garden and orchard produce, and for improved methods of affording shelter and protection to outdoor plants, as well as of heating, ventilating, and shading glass structures.

"FLORA AND SYLVA."—The second volume of this elegant publication has now been issued. The paper, type, illustrations, and binding are all alike excellent of their kind. The text is varied, and much of it of permanent value. Why Correas should be called "Australian Fuchsias" is not very obvious, for the resemblance is of the most superficial character, and in structure and lineage they have nothing to do with Fuchsias, while the name Correa is surely unobjectionable. "Cape Cowslips" as a substitute for Lachenalia may be objected to on the same grounds, but even more strongly. Vernacular names are most desirable when they are sanctioned by long usage, and not modern coinages, and especially when they are accurate, for in gardening as in other matters we should strive after truth as strenuously as after beauty. Printer's errors, like "filipenaulina" and "Aubretia" are, as we know by painful experience, never likely to be completely eliminated, but "Guelder Rose" for Gueldres Rose is something more than a typograpical slip. Here again the Viburnum has about as much or as little relation to a Rose as a Cabbage has to a Cucumber. Doctors differ in more important matters than etymology, as illustrated by an *obiter dictum* of Sir HENRY THOMPSON, who is here cited as having said that Strawberries of all foods known to mortals are those most conducive to the formation of lithic acid. This is a statement that should not be made without confirmatory testimony. We suspect it to be in conflict with general experience, and it certainly does not tally with the allegation made by LINNÆUS that he cured himself of the gout by eating Strawberries. So far as we know, LINNÆUS offered no more evidence on the subject than did Sir HENRY THOMPSON. Apart from its attractive appearance, the volume before us will be of substantial, permanent value by reason of the numerous monographs of plants of garden interest that it contains.

FOLIAGE BEGONIAS.—There is an interesting article on this subject, copiously illustrated, in the last number of MÖLLER's *Deutsche Gärtner-Zeitung*. These handsome plants deserve more attention than they get.

"CUNARD CHRISTMAS AND NEW YEAR ATLANTIC SOUVENIR."—This publication for 1904—1905 contains an interesting account of the fine modern ships of to-day as contrasted with those of even a quarter of a century ago. Ocean travellers are now surrounded with not merely comforts but luxuries, and one of the additions during the season to certain of the Cunard liners is the fitment to them of the Marconi telegraphy apparatus by which they are enabled to receive constant messages from England and America, even when equi-distant from both continents. A vessel is now being built for this service to be propelled by turbine engines. The *Souvenir* includes some light literature for holiday reading. It is obtainable from the Company's offices, 8, Water Street, Liverpool.

KEW.—An "Appendix" to the Bulletin has recently been issued containing a list of members of the respective staffs of the botanical departments at home, in India, and in the Colonies.

MARKET MEASURES.—For purposes of conversion the Board of Agriculture, in their weekly return of market prices, have adopted the following rates:—

Apples, "bushel" = 42 lb.; "pot" = 63 lb.; "case" = 40 lb.; "barrel" = 140 lb.
Pears, "case" = 20 lb.
Beet, "pot" = 70 lb.
Brussels-Sprouts, "pot" = 40 lb.; "hamper" = 60 lb.
Onions, "Dutch bags" = 110 lb., taken as 1 cwt.: "Valencia case" = 120 lb.
Spinach, "bushel" = 24 lb.
Turnips, "pot" = 60 lb.
Potatos, "load" = 252 lb.; a "bag" of foreign Potatos = 1 cwt.

CASTILLOA RUBBER.—According to a note in the *Tropical Agriculturist* for January, the samples of rubber from Castilloa grown in Ceylon are the "finest yet seen." The rubber was procured by a simple method from quite young trees.

"GIFTS."—We have on more than one occasion pointed out that the remedy for illicit commissions rests with the nurserymen themselves, and if they would co-operate in the same way that they did several years ago in abolishing the more than questionable practices then prevalent in the seed-trade they would be equally successful now. One very great difficulty however remains to be overcome: How can the Dutch merchants be prevented from offering a discount to the gardener—a discount sometimes larger than what is given by our own firms? We have called attention to this matter before, and now we see that the *Agricultural Economist* is taking up the question. It is to be hoped that the newly-established Gardeners' Association will attend to this reform among others that are needed.

THE HANLEY (STAFFS.) HORTICULTURAL SHOW AND FETE.—Mr. JOSEPH KENT having retired from the office of Secretary, Mr. WM. POULSON, Town Hall, Hanley, has been appointed to the position.

ABERDEEN AND NORTH OF SCOTLAND AGRICULTURAL COLLEGE—LECTURES TO GARDENERS.—Under the auspices of this College several courses of lectures on various subjects have been given during the present session. The Governors of the College have just arranged for another course on "The Elementary Chemistry of Soils and Manures" for the benefit of horticulturists, professional and amateur. The lectures, which are to be delivered by Mr. JAMES HENDRICK, in the Agricultural Department of

Aberdeen University, on the evenings of February 21, 28, March 7, 14, 21, and 28 (Tuesdays), at 8 o'clock, are intended to assist gardeners and others in and around the city of Aberdeen to obtain scientific knowledge of the growth of plants, of what plants derive from the air, and of what they derive from the soil. The nature and composition of the soil itself in relation to air, water, fertility, &c., will be explained. Detailed information applicable to the special conditions required in the case of gardeners in regard to the use of manures, natural and artificial, will be supplied, while the results of the best methods for combating insects, fungus, and weed pests will be explained. Employers are recommended to make an effort to induce as many of their *employés* as possible to attend the course. No charge will be made for attendance on the lectures.

ENGLISH HOLLY IN AMERICA.—We learn that considerable quantities of berried Holly find their way to the American markets. We can hardly look on this fact with complacency, as we fear it will entail the mutilation and spoliation of one of our greatest ornaments. For once we should be glad if our cousins would put on a heavy import duty—but then we have no Holly to sell!

SOLANUM COMMERSONI AND EDIBLE POTATOS.—In a recent issue of the *Comptes Rendus* M. EDOUARD HECKEL speaks of Solanum Commersoni, Dunal, and its great variability under different conditions, and suggests its connection with the cultivated Potato, from which in some of its forms it can hardly be distinguished. Mr. HECKEL observes that:—"1st. S. Commersoni presents as many different forms as does the true S. tuberosum, therefore this species has certainly played an important part in the origin of our ordinary Potatos. 2nd. The striking parallelism existing between the same series of variations seems to disprove that close connection between the two original species which was so strongly urged by BAKER (who grouped all the forms of tuberous Solanums as simple varieties of one type—S. etuberosum). 3rd. The complete and permanent variations supervening upon alteration in the surrounding conditions, especially evident when COMMERSON'S species was grown in a moist situation such as it inhabits naturally, show how considerable is the range of variation in certain species, and how the phenomena of 'mutation' observed by DE VRIES may be so important that in two generations all the characteristics peculiar to a species may be lost. 4th. The violet variety of S. Commersoni seems actually, by its great productiveness (63·000 kilogrammes per hectare) and its preference for damp soils, to suggest its profitable culture in marshy soils, hitherto almost unproductive."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

CUCUMBER DISEASE OR "SPOT."—Until last year I have not had any personal experience of the dreaded "spot" in Cucumber-plants, and I had hoped that I should never again have a similar experience, but unfortunately the disease re-appeared in the plants in the month of July! As soon as I detected the small spots (about the size of the head of an ordinary pin at first), I dusted over the affected leaves with flowers-of-sulphur, with a view of destroying the fungus then on the leaves, as well as to render the latter less liable to further attacks. Finding that this did not have quite the desired effect, I cut the entire spots clean out of the leaves, or removed the leaves altogether where badly affected, but to no useful purpose, as the spots continued to spread not only in number but also in size—appearing on the young leaves as soon as unfolded! In each case I observed that the "spot" appeared on the plants near the door at the colder end of the house (150 feet from the heating apparatus). The disease generally appears after fire-heat has been dispensed with, say, some time in June, and sometimes before, when the quantity of fuel used in the furnace is not sufficient to warm the pipes at the top end of the house, with perhaps the same quantity of moisture distributed therein as when the water in the pipes was heated to the boiling point the entire length of same. I may say that I have never heard of the "spot" attacking Cucumber plants in private gardens, and I would at the same time remind the readers of the *Gardeners' Chronicle* that in private places Cucumbers are generally afforded artificial bottom and top-heat during the whole period of growth. Hence their immunity from "spot." Moreover, the plants in private gardens are cropped lightly, the young fruits being thinned out, the object being to obtain a regular supply of a few dozen fruits a week from a given number of plants for, say, a period of six months, whereas the object of the grower for market is to take all the saleable Cucumbers that the plants under skilful and generous treatment are capable of yielding in as short a time as possible; the plants too, being grown without bottom-heat of any kind whatever. Thus it will be seen that Cucumbers in private places and in market gardens are grown under very different conditions. As the result of my cogitations regarding the "spot" in Cucumber leaves during the last two seasons, I have arrived at the conclusion that a preventive, if not a remedy, is to be found in the vaporising of the Cucumber houses with sulphur once a fortnight from the end of April until the plants have done bearing. By the use of Campbell's Sulphur Vaporising Machine, every particle of leaf and stem growth will be finely and evenly covered with the sulphur deposit and with which the atmosphere is as a matter of course also impregnated to such an extent as to kill and further prevent the appearance of the fungus during the intervals indicated. No more moisture should be distributed in the Cucumber house, especially after the fires have been let out, than is absolutely necessary for the well-being of the plants. When the old ridges are removed from each house preparatory to starting a fresh batch of plants, sulphur should be burnt therein so as to kill any insect or germs of disease that may be in them, the wood and glass being then washed with water and the brickwork with hot lime, so as to make them clean and sweet before the new soil with which to form the ridges is wheeled in. I may say at once that, so far as my observations and conclusions based thereon count, the cause of "spot" appearing on Cucumber-leaves is not to be attributed to the composition and condition of the soil in which the plants are growing under expert management, but, on the contrary, to the fact of unfavourable external as well as internal atmospheric conditions occurring at a time when the vigour and energies of the first batch of plants have become nearly exhausted through the production of heavy and continuous crops of fruit during the previous ten or twelve weeks, the plants being consequently more likely while in that condition to experience a check from a sudden and unfavourable change taking place in the weather after fire-heat had been dispensed with, than a batch of young plants just coming into bearing would be. Neither, in my opinion, is the remedy for "spot" on Cucumber-leaves to be found in the application of liquid nostrums at the roots. Viewing, from a practical point, the "Practical Directions for Treatment" given by Mr. George Massee in his article published in a recent volume of the *Journal of the Royal Horticultural Society*, entitled "To Protect Cucumbers and Tomatos from Fungus," and quoted in Mr. Owen Thomas's interesting article (p. 439), I am unable to see what possible good could result from the carrying out of the directions given in the above-mentioned article; such, for instance, as the advice given as to the watering of Cucumber-plants, when a fortnight old, every third day for six weeks with a solution consisting of 1 oz. of sulphate of copper dissolved in 50 gallons of water, afterwards applying a stronger dose every fourth day. This advice should be carefully considered before being acted upon; even the application of rain-water only to young plants a fortnight old every third day may have a bad effect. *H. W. Ward.*

CEDRUS DEODARA VAR. ALBA SPICA.—In reference to this variety (see p. 76), the trees are growing in a position facing the west, and until three years ago they were much protected from north-east and east winds. The two trees growing here came from Messrs. John Waterer & Sons' nursery, Bagshot. If Mr. Page happens to be in the vicinity of Haslemere at any time, I shall be very pleased to show him our trees. *Thos. Harris Lower Grayswood Gardens, Haslemere.*

CRYPTOMERIA JAPONICA.—I have much pleasure in giving your correspondent, Mr. A. C. Forbes, the cubic contents of the above tree, quarter girth measurement, which is 64 by 8 feet, 28 ft. 5 ins. over bark. The timber, however, is not sound. The heart is decayed for some 16 ft. from the base of the tree. The cubic contents would be much more if the tree tapered less. Growth has been less rapid for the last fifteen years, the tree not making more than from 12 to 14 inches, instead of from 18 inches to 2 feet each year, as formerly. I thank Mr. Bartlett for his note on the Pencarrow tree. Mr. Elwes writes me that he measured one slightly larger at Killerton. It would be very interesting to know the growth made by the Coollattin tree since 1891. *C. Page, Dropmore Gardens, Bucks.*

—— Since reading the remarks by Mr. Page and other correspondents, I have measured a specimen of Cryptomeria japonica growing in the grounds here. Its height is 45 feet and its girth 8 feet at 5 feet up, and 11 feet girth at ground line. The diameter of the branches is 35 feet. There is no account of the time it was planted, but from inquiries I have made it appears to have been planted by the late Sir Richard Green Price, Bt., in 1862. *W. Palliser, Norton Manor Gardens, Norton R.S.O., Rads.*

JASMINUM NUDIFLORUM.—In answer to the enquiry on p. 90, I may mention that there are in these gardens two large plants growing in warm and favourable positions. As a rule both of them flower profusely each year. This season, owing to the absence of frost, the plants have presented a mass of well-developed and apparently perfect flowers for the past eight or ten weeks. In previous years I have never noticed fruits at any stage of growth, nor have I seen insects of any kind on the plants when in bloom. To-day I have examined several faded flowers, but did not discover one that showed any sign of fertilisation. Occasionally we find a bunch of berries on the large-flowering variety of J. officinale, but this is quite the exception. *H. Stark, Crag Head, Bournemouth.*

ST. JAMES'S HALL AND ITS HORTICULTURAL ASSOCIATIONS.—The closing of this well-known hall for public purposes serves as a reminder that the first National Rose Exhibition was held here on July 1, 1858; and on September 23 in the same year a National Dahlia Show. Subsequent annual national exhibitions were held, either at the Hanover Square Rooms, the Crystal Palace, &c., and, though the National Rose Society and the National Dahlia Society were not formed for a few years afterwards, there is no doubt that the idea of permanent societies took its inspiration from what was done at St. James's Hall. Of those who took part in these two exhibitions forty-six years ago, how very few indeed survive! *R. D.*

THE GARDENERS' ORPHAN FUND.—Coming fresh from the recent annual meeting of the subscribers to the Orphan Fund, I took the opportunity on the same evening, at a largely attended meeting of the members of the Kingston Gardeners' Society, to lay the claims of the Fund before them, and earnestly begged the Society to take some action in support of its objects. The promotion of a concert was not favoured, as here we are flooded with such entertainments. I suggested that a collection in small silver and coppers be made at each meeting of the members, and then at the expiration of the session the entire amount thus obtained should be sent to the Fund. That suggestion was so far favoured that the hat was at once passed round, and 8s. thus collected. That so good a result will follow at each meeting I do not anticipate, but if some 2s. or 3s. be collected the strain on the members' pockets, and no gardener is rich, will be infinitesimal. Nevertheless a series of regular meetings might enable a goodly sum to be realised during each year. I told the members that when the annual election of orphans took place they could ballot for the privilege of representing the society as electors. If a society like ours could, for instance, raise, say £3, thus obtaining twelve votes, a good proportion of members would enjoy the privilege of being electors, and become keenly interested in the Orphan Fund and its operations. There are scores of these mutual improvement societies in the kingdom, as reports of proceedings in the papers from time to time show, but very few are subscribers to the Orphan Fund. Did all of them but make collections at their meetings from time to time, in the way we propose to do here, a very large sum might in that way be added to the Fund's income yearly. *A. Dean.*

EARLY PEACHES.—My experience with the variety Alexander quite agrees with that of Mr. Jordan. Some years ago, when taking charge of a garden in the Midlands, I found a young tree of "Alexander" growing in the large Peach-house among several others. As usual with young trees it had made a quantity of strong sappy growths; by judicious root-pruning and partial lifting it was brought into a bearing condition. When re-arranging the large house a year or two later, the tree was moved into the early house, and produced a moderate crop the first season, the fruits ripening during the month of May. In subsequent seasons the house was closed early in January, and as a rule we had fruits of good size and splendid colour ready in the first week of May. The bud dropping propensities were greatly mitigated by due attention to watering the border, frequent syringings overhead, and affording abundant ventilation during the summer, autumn, and early winter months. I should not have the slightest hesitation in planting "Alexander" Peach for early forcing. *H. S., Bournemouth.*

—— I should like to support Mr. Jordan respecting Alexander Peach. Here at Castle Hill is a tree that was one of the first sent out. I believe Messrs. James Veitch & Sons sent it here for trial when the variety was first introduced, about twenty-seven years ago. It is in the early-house, and bears each year a good crop of Peaches. The buds do not drop, because we afford plenty of water to the roots, and we commence to force the tree very gently in the way Mr. Jordan recommended. Some of the fruits ripen in the first week in May, and specimens have weighed from 6 to 8 oz. each. I can endorse all Mr. Jordan has said with regard to drought being the cause of all the mischief. In visiting gardens, I have observed the comparatively dry treatment of Peach-trees during the autumn and winter months, and have seen the same trees in the spring when the buds have dropped. *Jno. W. Barks, Castle Hill Gardens, Bletchingley, Surrey.*

—— We have had the varieties Hale's Early and Alexander for over eight years and they have not cast their flower buds. Neither variety shows such a profusion of flowers as do Royal George, Noblesse, Barrington, and other old English sorts, and, as Mr. Tomlinson states (see p. 91), some of the buds do not expand. They are trained on the front trellis of a curvilinear house, with trees of Royal George and Lord Napier Nectarine on the back wall. At one time we had a tree of Royal George also on the front, and we then used to close the house the first week in November, but it was as much as we could do to get a dish or two of ripe fruits the first week in May for a special function. Now we close on January 1, yet gather ripe Peaches as early as we did formerly, but they are from the variety Alexander. I think most Peaches and Nectarines cast their buds if planted in light, loose soil, and are not afforded abundance of water, especially after the fruit has been gathered and onwards. Out-door trees get more water at that stage than when in active growth. Our soil is stiff enough for anything. *W. P. R., Preston.*

THE GRAPE-VINE IN SOUTHERN ENGLAND.—As a subject that I have had in mind for many years, it gave me much pleasure to peruse Mr. Douglas's article in the *Gardeners' Chronicle*, February 4, on the cultivation of the Grape-vine on warm walls in our southern counties. That good Grapes can be obtained on out-of-doors Vines, if the culture is of the right kind and similar to that afforded by the old cultivators quoted by Mr. Douglas, is capable of proof. I have myself observed, as a boy, excellent Sweetwater, Parsley-leaved and plain-leaved varieties, Black Morocco, and Miller's Burgundy, produced on a south wall in the gardens at Stanley Grove, now St. Mark's College, Chelsea; at Eden Lodge, Kensington Gore, where my father was head gardener for several years; and on the roof of Vine Cottage, which stood where the Albert Hall was afterwards built. That which was possible then is equally so at the present date, although there may now be a greater amount of smoke emitted from house and factory chimneys. The gardeners of two or three generations back were good cultivators of out-of-doors fruits generally, taking great pains with the manuring, pruning, and training of the same, seeing that glass structures of any sort were less common, owing to the greater cost of construction, due to the heavy duty on imported glass and the consequent high price of that made in this country. Thomas Rivers, of Sawbridgeworth, advocated the employment of "ground" vineries, which were simply stretches of span-roofed frames of any length, according to space and requirements, with single rods of Vines slung along at the apex of the ridge, about 1½ feet from the ground-level, and the bearing shoots trained on either side at intervals of 1½ to 2 feet, in the same manner as house Vines on the short-spur system. The frames stood on a single or double line of bricks, as a means of preserving the woodwork from injury by damp. For affording extra space a trench similar to those thrown out for Celery was recommended. Rivers was a man of original and practical ideas, and to make the ground-vinery easily understood he constructed a number of them in his nursery as object-lessons for visitors. He also constructed "dug-out" vineries having lean-to and saddle roofs, with and without heating apparatus. The results were excellent in every way, although the means were of the roughest kind, no brick walls, and merely earth for the floors. He did not use the syringe much on his Vines, the moisture arising from the soil, more especially in the unheated vineries, being sufficient for the requirements of the Vines and keeping down red-spider, that plague in some gardens—in fact, the acarid could not live in the moist air of these structures. Of course the matter of ventilation received proper attention, and mildew was unknown. It seems a pity such inexpensive adjuncts to a garden have dropped out of use, for they served many useful purposes besides Grape-growing—such, for example, as the protection of saladings, early Broccoli and Cauliflowers in autumn and winter, and all kinds of early things in spring, as Peas, Cauliflowers, French Beans, Cabbage, Lettuces, Onions, &c. *F. Moore.*

HOLLYHOCKS.—It may interest your readers to hear that I make a specialty of growing the new type, which are annuals. The quick and luxuriant growth of the plants is not favourable to the establishment of the fungus. The seeds may be sown about the end of March, but if sown later of course they will not commence flowering so soon. Young plants transplanted about the beginning of May will commence to bloom about the end of July. They will remain in flower until late in the autumn. The branches that have borne flowers must be cut away, otherwise all the energy of growth will be devoted to the ripening the seeds. It is also worth while mentioning that the plants are just as hardy as those of the other types of Hollyhocks, therefore plants may stand another year, but I prefer to grow them year by year. I send to your address some packets of seeds of each strain by sample post and beg you to send these for trials to some of your correspondents interested in Hollyhocks in order that they may try these new strains. It is necessary to mention that the double strain is still not yet so perfectly double as those of the best varieties of Chater's Prize strains, but nevertheless the flowers are pretty nearly double, and ultimately I trust to have a strain that will compare with the best of any type of the biennial class. *Frederick Roemer, Quedlinburgh.* [The seeds in question have been forwarded for trial at the garden of the Royal Horticultural Society at Wisley. ED.]

SOCIETIES.

THE ROYAL HORTICULTURAL.

FEBRUARY 14.—It will be seen from the amount of space devoted in this issue to the doings of the Royal Horticultural Society, that Tuesday last was an unusually busy day. The attendance of Fellows is always greater on the day of the annual meeting than it is at ordinary meetings of the Society, and exhibitors seek to improve the occasion by bringing to the Hall as much as possible.

The report printed below will show what an important display was made of Orchids, and the ORCHID COMMITTEE recommended as many as one First-class Certificate, four Botanical Certificates, and two Awards of Merit to novelties.

The collection of Orchids from JEREMIAH COLMAN, Esq., was of great magnitude and excellence.

The FLORAL COMMITTEE recommended four Awards of Merit to novelties, but the FRUIT AND VEGETABLE COMMITTEE made no Award at all.

All the Committees sat in separate rooms on the first floor, but means should have been taken to see that sufficient room and seats were provided for the members. This will, we doubt not, be done on future occasions. The Society's officers have had an extraordinary amount of work to do during the past twelve months owing to the change of offices, and have done it remarkably well, but in the near future a normal condition of things may be expected to obtain.

Floral Committee.

Present: Geo. Paul, Esq. (in the chair), and Messrs. H. B. May, C. T. Druery, Jno. Green, F. Page-Roberts, (Rev.) C. E. Pearson, R. C. Notcutt, G. Reuthe, Chas. Blick, Jno. Jennings, C. J. Salter, Chas. Dixon, J. F. McLeod, W. Howe, W. Bain, Charles Jeffries, R. Hooper Pearson, Herbert J. Cutbush, E. T. Cook, James Hudson, W. Cuthbertson, George Gordon, W. P. Thomson, W. J. James, Harry Turner, and E. H. Jenkins.

Erica × Veitchi, a hybrid from E. codonodes (lusitanica), was shown by Messrs. ROBERT VEITCH & SON, Exeter. A plant nearly 4 feet high and as much in diameter was shown in flower from the open-air at Exeter. The flowers are white, and the habit of the plant is more like that of E. arborea than E. codonodes. The Committee recommended that the variety be tried out-of-doors at Wisley, it being very valuable if it will flower out-of-doors at this season.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, set up a large collection of ornamental foliage plants—Codiæums (Crotons), Dracænas, Ferns, Caladiums, Palms, Dieffenbachias, Begonia Rex, &c. A batch of Adiantum Farleyense occupied the centre of the group, and an excellent collection of Dracænas was staged to the right of these plants (Silver Flora Medal).

Messrs. WM. CUTBUSH & SON, Highgate, N., put up a handsome group of forced flowering plants—Magnolias, Lilac, Staphylea colchica, numerous species of Prunus and Pyrus, Spiræa prunifolia, Rhododendrons, &c. Magnolia Lenne was noticed with its claret-coloured petals, also a grand plant of M. Halleana (Silver-gilt Flora Medal).

Messrs. J. HILL & SON, Barrowfield Nurseries, Lower Edmonton, displayed a group of choice specimen Ferns (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea, exhibited some excellently flowered plants of Primula × kewensis, Eupatorium vernale, Coleus thyrsoideus, Cheiranthus × kewensis, and a large group of pot plants of Loropetalum chinense.

Rev. H. BUCKSTON, Sutton Hall, Derby (gr. Mr. Shambrook), staged a number of pot plants of Cyclamen. The plants were of large size, perhaps not as compact as is desirable, but well and plentifully flowered (Silver Flora Medal).

Mr. K. DROST, Kew Nurseries, Richmond, showed a number of plants of Hippeastrums (Amaryllis). Colour, form and substance of the flowers were all alike superior in quality (Silver Banksian Medal).

Messrs. AMBROSE & SONS, Cheshunt, staged a miscellaneous collection of greenhouse plants, Cinerarias, Carnations, Eucharis grandiflora, Tulips, &c. (Bronze Banksian Medal).

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, staged a small exhibit of greenhouse subjects, Acacias, Ferns, Boronia megastigma, Orange plants in fruit, &c.

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, included in their exhibit a new Dracæna with narrow, vinous-coloured leaves, named The Queen; several pot plants of Loropetalum chinense, &c.

CHINESE PRIMULAS.

Several of the leading firms of seedsmen displayed large groups of Chinese Primulas, and these, with their bright colours gave a very pleasing appearance to the hall.

Messrs. James Carter & Co., Holborn, filled a side of one of the long tables with a collection of these flowers, exhibiting batches of plants in their respective colours. The plants represented a very desirable strain of this popular flower. A batch of plants of the "stellata" type occupied the centre of this group. The variety Princess of Wales was prominent (Silver Banksian Medal).

As growers of the Chinese Primula, Messrs. Sutton & Sons, Reading, are difficult to excel. For excellence of habit and for brilliancy and variety of colours, the group displayed by this firm was most remarkable. Each plant was shapely, with foliage in due proportion to the inflorescence. They made a pleasing impression, and gave evidence of the great care and judgment displayed in their cross-breeding, selection, and cultivation. The collection entirely filled an extensive table, the groups on either side being marked off by a line of Cineraria plants running the whole length of the table. Among the few varieties our space permits us to mention are The Czar (a handsome type, with deep lavender or blue-coloured flowers), Crimson King (deep crimson), The Duchess hybrids of all shades of colour, The Pearl, and His Majesty (a handsome, semi-double white variety) (Silver-gilt Flora Medal).

Messrs. Cannell & Sons, Swanley, also made an imposing display of these flowers. The strain is of a robust nature, with massive foliage and bold heads of flowers, a type which finds favour with many growers. The flowers are large and colours excellent, making admirable subjects for decorative effect. The stellata type was largely represented in this collection, among which was a new variety named Miss Ellen Willmott. Messrs. Cannell's strain of "Giant Mixed" is commendable (Silver-gilt Flora Medal).

Mr. W. Palmer, Andover Nurseries, Andover, Hants, staged a large batch of a double-flowered variety of Primula sinensis named Queen Alexandra. This is a tall, free-flowering variety, with soft, blush-coloured petals, the habit of plant being intermediate between that of the ordinary and of the stellata type. The remainder of the table was furnished with plants of another variety named Island Queen, carrying flowers of a pleasing soft pink colour (Silver Banksian Medal).

A fine spray of flowers of an interesting plant was exhibited by F. A. Bevan, Esq., Trent Park, New Barnet (gr., Mr. H. Parr), in Bryophyllum calycinum. This plant freely produces bulbils from the edges of its leaves, and is one of the best examples of a plant that reproduces itself in that manner. An allied species, B. crenatum, was figured in these pages January 24, 1903, p. 59.

ALPINE PLANTS.

A large exhibit of Alpine plants was set up by Messrs. W. Cutbush & Son, Highgate, N., who arranged their exhibit in a natural manner, introducing pieces of rockwork in the group. Many choice plants were shown in flower. We noticed Tulip Kauffmanniana coccinea and T. K. aurantiaca; Iris persica, Danfordi, reticulata, Krelagei, and numerous other species; Narcissus minimus, &c.

Messrs. Barr & Sons, King Street, Covent Garden, contributed a good display of early-flowering species, such as Irises, Snowdrops, Anemones, Saxifrages, Scillas, &c. Among other species of Narcissus, we noticed the delicate N. Cyclamineus in flower.

The Fox Hill Hardy Plant Nursery, Keston, Kent, set up numerous pots and pans of such plants as Irises, Crocuses, Colchicums, Hepaticas, Saxifragas, Anemones, including many fine varieties and rare species. The collective exhibit presented quite a splash of colour. The charming Narcissus Clusii was noticed in flower (Silver Banksian Medal).

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, staged three boxes containing "Alpines," including a large number of plants of Cyclamen Coum, and of C. ibericum in varieties. Irises were well displayed, I. Danfordi, I. Heldreichi, &c. (Bronze Banksian Medal).

Messrs. Thos. Ware, Feltham, showed an excellent collection of Alpine and hardy plants in flower; Primula obconica and its varieties were prominent, Crocuses, Irises, Hepaticas, Saxifragas, and a host of similar plants, all presented in first-class condition, made a commendable exhibit. Plants of Sarracenia flava were shown in flower (Silver Banksian Medal).

Messrs. John Peed & Son exhibited numerous pans of Saxifragas, most of the garden species being represented, also Sedums, Sempervivums, Hutchinsia alpina, &c. A box contained succulent plants such as Aloes, Echeverias, Opuntias, &c.

The Misses Hopkins, Mere, Knutsford, Cheshire, staged a few Christmas Roses, Blue Primroses, &c.

Messrs. J. Cheal & Sons, Crawley, arranged a small rockery in which were planted numerous Alpine and early-flowering hardy plants (Bronze Flora Medal).

The Guildford Hardy Plant Nursery, Millmead, Guildford, contributed a small number of hardy plants and "Alpines" in flower, Galanthus Elwesii, Hepatica triloba, Bulbocodium vernum, &c.

Awards.

Carex Vilmorini.—A plant with extremely narrow green leaves was shown under this name by Messrs. H. Cannell & Sons, Swanley, Kent. The numerous leaves droop arch-like in a most graceful manner, and the plant when cultivated in 3-inch or 4-inch pots would be very suitable for furnishing vases. The leaves appear only to get about 5 inches high before drooping, and 5-inch pots as shown are therefore rather too large to obtain the best effect from the plant (Award of Merit).

Crocus chrysanthus variety. — Miss Willmott, V.M.H., exhibited a plant with white flowers, apparently near to the variety albidus. It had bluish-purple marks on the exterior of the three outer segments, and a yellow-coloured base in the interior of the flower. The flowers were exceedingly pretty, and the bright orange-red-coloured pistil very effective (Award of Merit).

Primula sinensis "His Majesty."—This is a double-flowering variety of the Chinese Primula, similar to those frequently exhibited by Messrs. Sutton & Sons, but having larger, finer flowers of pure white. Shown by Messrs. Sutton & Sons, Reading (Award of Merit).

Rose Prince de Bulgarie.—A very beautiful Tea Rose of warm pink colour, the outer petals becoming pure white, of good form and at present proving itself a first-class variety for forcing. Shown by Messrs. Paul & Sons, The Old Nurseries, Cheshunt (Award of Merit).

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, Francis Wellesley, J. W. Potter, R. Brooman-White, W. Boxall, W. H. Young, H. J. Chapman, J. W. Odell, H. G. Morris, A. A. McBean, H. T. Pitt, G. F. Moore, J. Douglas, W. Cobb, H. A. Tracey, J. Charlesworth, H. Ballantine, W. A. Bilney, F. W. Ashton, T. W. Bond, H. Little, W. Bolton, and Harry J. Veitch.

The great attraction was the very fine group of Orchids occupying the broad end staging and running the whole width of the Hall, staged by Jeremiah Colman, Esq., Gatton Park (gr., Mr. W. P. Bound), and for which the Society's Gold Medal was awarded, and also the Lindley Medal, for excellence of culture. The group was made up of the greater part of the plants referred to in our report of the Gatton Park Orchids at p. 100, and the effective staging, with a backing of Palms and carpeting of Maidenhair Ferns and other foliage plants, was very cleverly carried out by Mr. Bound. In the centre was a group of Epidendrum × Boundii, fronted by a white Lælia anceps. On each side, high up at the back, were collections of hybrid Calanthes, the Dendrobiums forming the body of the group.

Baron Sir H. Schröder, The Dell, Egham (gr., Mr. Ballantine), was awarded a Silver-gilt Flora Medal for a very fine group of rare Orchids. The Odontoglossums were well represented, the spotted crispums having for their best the perfectly-shaped, finely-marked O. c. Veitchianum, still one of the finest; O. × Adrianæ Victoria Regina, a great beauty; O. Hallii xanthodon, fine O. × Wilckeanum, O. nevadense, and others; two arrangements of the handsome Calanthe × Baron Schröder and C. Regnieri; Cypripedium × Baron Schröder, very finely marked with purple; C. × Lathamianum, C. × Calypso, C. insigne Sanderæ, and other Cypripediums, each with several flowers; varieties of Cattleya Trianæ, including the old and fine C. T. Russelliana; Dendrobium aureum album and some pretty hybrid Dendrobes; Masdevallias, Sophronitis grandiflora, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, secured a Silver-gilt Flora Medal for a very excellent group in which the middle portion was made up of fifty fine and well-bloomed specimens of Phalænopsis Schilleriana, with one plant of the rare P. sumatrana. At the end of the group were selections of fine hybrid Orchids, including the showy and favourite Lælio-Cattleya × Charlesworthii, L.-C. × Sunray, L.-C. × luminosa, L.-C. × Andromeda, L.-C. × Myra, Cattleya × Octave Doin, Brasso-Cattleya × Digbyano-Warscewiczii, and other hybrids of Brassavola Digbyana. The Odontoglossums included some good O. crispum, a very handsome and finely-shaped O. × ardentissimum heavily marked with rose-purple, Dendrobium atroviolaceum, Trichopilia suavis, &c.

Messrs. Sander & Sons, St. Albans and Bruges, were awarded a Silver Flora Medal for a small group of very remarkable species and hybrids. The species included the superb new Cymbidium Sanderi and the new white Vanda Watsoni (for both see Awards), good Odontoglossum crispum including spotted varieties, Spathoglottis Amesiana, and several singular botanical Orchids. The finest of the hybrids were the noble Odontoglossum × Harryano-crispum Rex (Harryanum × crispum Rex), raised at Bruges, and which in its very fine colour shows the effect of the fine blotched O. crispum Rex. The flowers on the small plant measured 4½ inches diagonally; the sepals pale yellow nearly covered with large red-purple blotches; petals similarly coloured, but with smaller markings; lip white, with rose-purple spots in front of the yellow crest. Other pretty hybrids were O. × blando-nobile (blandum × nobile (Pescatorei), white, spotted with purple; O. × loochristyense Sander's variety, very rich in colour; good O. × Wilckeanum, Cypripedium × Helen II. pulchrum, &c.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), secured a Silver Flora Medal for an interesting group of Odontoglossums, Lælio-Cattleyas, &c. The Lælio-Cattleyas, most of which had the rare yellow L.-C. × Ernesti Princess Olga as one parent, were grown and flowered in three years from the seed. They were of pretty shades of yellow tinged with pink, and with ruby-crimson fronts to the labellum. The varieties shown were Lælio-Cattleya × Oakwood Alpha (Ernesti Princess Olga × L. Schroderæ), L.-C. × Oakwood Beta Lord Rothschild × callistoglossa (resembling L.-C. × callistoglossa in colour), L.-C. × Oakwood Gamma (L. Jongheana × L.-C. × Ernesti Princess Olga), and L.-C. × Oakwood Delta (C. Schröderæ × L.-C. × Ernesti Princess Olga). The group also contained the handsomely blotched Odontoglossum crispum [Lindeni, O. c. xanthotes Cooksoniæ, O. c. Cooksonianum, O. c. purpurascens, and the bright yellow, brown-blotched O. × Prince of Orange, and the fine purple-blotched O. × Wilckeanum Sibyl. Also Cypripedium × Orion bellum, cream-white with numerous purple spots.

Messrs. Jas. Veitch & Sons, Chelsea, were awarded a Silver Banksian Medal for a neat group including Lælio-Cattleya × Pallas, L.-C. × Violetta, L.-C. × warnhamensis, L.-C. × Haroldiana, Lælia × Mrs. Gratrix, the bright yellow Dendrobium × Ophir, two forms of Calanthe gigas, the variety excellens very fine in colour; and Cypripediums, Phalænopsis, &c.

Messrs. Hugh Low & Co., staged a small group of very pretty forms of Cattleya Trianæ, Cypripediums, and the showy Lælio-Cattleya × Captain Percy Scott Bush Hill Park variety.

Mr. J. Cypher, Cheltenham, had a very pretty group in which the varieties of Dendrobium nobile were very fine, including D. n. Cypheri, D. n. nobilius, D. n. Amesiæ, D. n. pulcherrimum, &c.; also Cattleya × calummata, Masdevallia gargantua, Cypripedium × aureum virginale, C. × Swinburnei, &c.

Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), showed Cattleya × chocoensis "Westfield variety," a charming white flower with distinct purple and yellow markings in the throat; C. Trianæ "Laura," white with lemon-yellow disc and slight pink tinge on the lip, &c.

Sir Trevor Lawrence, Bart., Burford (gr., Mr. W. H. White), showed Dendrobium × Euryalus purpurascens, as fine in colour as D. nobile nobilius; the pretty Cypripedium × Watsoni, and three others (see Awards).

W. M. Appleton, Esq., Weston-super-Mare (gr., Mr. Brooks), sent Cypripedium × Leeanum Appletoniæ, and C. Daphne (exul × Charlesworthii).

Mr. John Robson, Altrincham, sent Cypripedium × aureola, of the C. × aureum class.

F. W. Moore, Esq., Royal Botanic Gardens, Glasnevin, Dublin, showed the fine yellow Mormodes badium luteum.

J. Bradshaw, Esq., Southgate (gr., Mr. Whitelegge), showed Lycaste Skinneri "Glory," and Cattleya Trianæ "Fairy Queen."

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), showed Cypripedium Boxallii Rosslyn variety, and Lælia anceps Schroderiana Rosslyn variety.

Captain G. L. Holford, C.I.E., Westonbirt (gr. Mr. Alexander), showed Sophronitis rosea.

H. S. Goodson, Esq., Putney (gr. Mr. G. E. Day), sent Cypripedium × Katherine (insigne Sanderæ × superbiens).

De B. Crawshay, Esq., Rosefield, Sevenoaks, showed the creamy-white, brown-spotted Odontoglossum × loochristyense "Theodora," a marvel of good culture, bearing a very strong spike of flowers and a large seed capsule on the last spike; also Lælia anceps Hollidayana rosefieldiensis, and Theodora.

C. J. Lucas, Esq., Warnham Court (gr. Mr. Duncan), sent Lælio-Cattleya × bletchleyensis "Eric Lucas," of fine colour, and good specimens of Cypripedium × Lathamianum superbum, and C. Calypso, Warnham Court variety.

Awards.

First-class Certificate.

Cymbidium Sanderi. — A grand new species of totally distinct character, imported by Messrs. Sander & Sons, St. Albans. The 2-feet-long scape rises erect and bore on the top in this case three large flowers in some degree resembling those of the best C. eburneum, but structurally different. The plant flowered on an imported spike, and four other flowers on the spike were not developed. Flowers 3½ inches across, sepals and petals white, slightly tinted with pink and with small purple spots at the base. The lip, which is the beautiful feature of the flower, is large, the side lobes curved to the column, the front lobe expanded, white with a most beautiful tracery of rose-purple dotted lines on both side and front lobes. From Messrs. Sander & Sons.

Botanical Certificates.

Vanda Watsoni, from Sir Trevor Lawrence, Bart., and Messrs. Sander & Sons. — See *Gardeners' Chronicle*, February 11, p. 82. Growth of V. Kimballiana. Flowers white.

Odontoglossum liliiflorum, from Baron Schröder.—An extremely rare Orchid of the form of O. ramosissimum. Flowers pink with a few purple spots.

Dendrobium cymbidioides, from F. Moore, Esq., Glasnevin, Dublin.—This is the true plant, and very distinct from the one so named in gardens (*Gardeners' Chronicle*, January 7, p. 15). Sepals and petals yellowish; lip white marked with purple.

Dendrobium æmulum, from Sir Trevor Lawrence, Bart.—A graceful white Australian species.

Awards of Merit.

Cypripedium × *Leoniæ* (*Craveniæ callosum* × *insigne Harefield Hall*), from J. F. Craven, Esq., Beeches, Keighley, Yorks (gr., Mr. Corney).—A stately hybrid, much resembling C. insigne Harefield Hall, but broader and with more white in the dorsal sepal.

Cypripedium × *Honnoriæ* (*Drurii* × *Godefroyæ leucochilum*), from W. M. Appleton, Esq.—Flower ivory-white dotted with purple, and bearing a purple line up the petals.

Cultural Commendation.

To Mr. W. H. White, gr. to Sir Trevor Lawrence, Bart., for a large pan of Sophronitis grandiflora with sixty flowers.

To Mr. Stables, gr. to De B. Crawshay, Esq., for Odontoglossum triumphans leopardinum with a branched spike of thirty-five flowers.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq., in the Chair, and Messrs. S. Mortimer, Thos. Arnold, Ed. Beckett, Alex. Dean, F. Q. Lane, W. Pope, Jas. Gibson, Geo. Kelf, G. Reynolds, H. Markham, W. H. Divers, G. Norman, J. Willard, Geo. Wythes, Owen Thomas, J. Lyne, W. Poupart, P. C. M. Veitch, H. Parr, and Chas. Foster.

A magnificent collection of Apples was staged by Messrs. G. Bunyard & Co., Maidstone, Kent. The collection comprised most of the best-known varieties, exhibited in the best possible condition, and formed probably one of the finest displays of these fruits ever seen at such a late period in the season. The exceptional season no doubt accounted for the possibility of showing such meritorious fruit; but to this must be added the skill in cultivation and the perfection of means for keeping the fruits. The display was awarded a Gold Medal.

Although Apples were so excellently displayed from Kent, a collection from Herefordshire put up by the King's Acre Nurseries, Ltd., King's Acre, Hereford, was very meritorious, for the colour and finish of the individual fruits were extraordinary, such varieties as Blenheim Pippin being rosy-red all over, reminding one of such highly-coloured varieties as Worcester Pearmain (Silver-gilt Knightian Medal).

Oswald P. Serocold, Esq., Taplow Hill, Taplow (gr., Mr. R. Bullock), staged thirty-five dishes of Apples, principally of dessert varieties. The specimens were not over-large in size, but were of excellent finish, some fruits of Blenheim Pippin being especially noteworthy in appearance (Silver Banksian Medal).

ANNUAL MEETING.

The one-hundred-and-first Annual General Meeting of this Society was held on Tuesday afternoon last at the Society's Hall, Vincent Square, Westminster. Sir Trevor Lawrence, Bart., K.C.V.O., V.M.H., the President, occupied the chair, and there was a large gathering of Fellows.

After the minutes of the last annual meeting had been confirmed, about a hundred new members were elected.

The Report of the Council was taken as read.

The President, in moving its adoption, said: It is now my duty to make a few remarks with regard to the Report that has been circulated amongst the members of the Society. In the first place I think that we, who have the good fortune to be Fellows of this Society, have every reason to congratulate ourselves upon what has taken place during the Centenary year. I have before me a letter from a very old Fellow of the Society, the Rev. Honywood D'Ombrain. He is not only an old member of the Society, but as he has arrived at an advanced age he is, unfortunately, unable to be among us. He says: "When I contrast the present flourishing condition of the Society with what it was in the dark days at South Kensington, I cannot but rejoice at the change which has taken place." There is nobody in this room who does not heartily reciprocate the feelings expressed by our friend; and when we consider the great interest taken in the art and craft of Horticulture throughout the country and throughout all ranks, I think it must be a subject of congratulation that the Society has arrived at its present position with every prospect of maintaining that position.

The Hall.

With regard to the doings of the past year, of course the central occurrence was the opening of this Hall and this building by his Majesty the King and her Majesty the Queen. His Majesty has invariably shown a warm interest in the welfare of the Society. He subscribed to the funds for building this Hall, as did his Royal Highness the Prince of Wales. His Majesty was also present at the show in the Temple Gardens last year, accompanied by the Queen. Her Majesty was likewise present at the very beautiful show held in the grounds of Holland House.

We have now seen a little of the capacity and the utility of this Hall, and we know that, although it provides us with abundant accommodation, it does not provide us with any too much. We know that it is admirably lighted, and that it is well proportioned.

(Sir Trevor Lawrence here read a paragraph from one of the leading papers testifying to the excellent acoustic properties of the Hall.)

It is impossible to pass from the subject of the Hall without saying a word of regret at the absence of Baron Schröder, to whom we owe so much. The Baron is in the Riviera, and I am sure we are all glad to learn from his gardener that his health is better than it has been. He unfortunately caught a severe cold when he was going out, and was confined to his bed We are proposing to put up a tablet to commemorate the connection of Baron Schröder with this Hall Not only has the Baron subscribed most liberally to our funds, but he has borne the expense of [transferring and] furnishing the Lindley Library—a costly operation—and he has used his influence with his friends to induce them to subscribe towards the building fund.

The Report of the Council enters so largely into all that is to be said with regard to the present position of the Society that it will not be necessary for me to detain you at any length.

Wisley.

I may say a word with regard to one other matter of the greatest possible importance during the past year, and that is the acquisition of our new garden. The Society owes a great debt of gratitude to our friend Sir Thomas Hanbury for his generosity in this matter. In common, I dare say, with many here present, I had the pleasure of knowing the late Mr. Wilson for many years, and on many occasions I had the pleasure of going round his most interesting gardens. It is hardly possible to imagine that a more fortunate chance should have occurred than that which enabled Sir Thomas Hanbury to purchase this land and to present it to the Royal Horticultural Society. I can bear emphatic testimony to the excellence of the gardens. I went over the ground on two or three occasions during the spring, and on every occasion it was a perfect feast of interest and flowers; and I strongly recommend those who desire to see Primulas, Irises, and a vast variety of hardy plants, to go there during the proper seasons. Of course, it has been necessary for the Society to do a great deal at Wisley. The garden, as carried on by Mr. Wilson, was a hardy plant garden, and for the purposes of the Society it has been necessary to build ranges of hothouses and plant-houses and residences for the Superintendent and the fruit foreman. A good deal of money has been spent in that direction. Fortunately we have been able to obtain for the remainder of the Chiswick lease a sum of about £4,700, and that will go far to cover the outlay at Wisley. Then with regard to paragraph 7, which refers to the desire of the Council to establish a laboratory for scientific and experimental research in matters relating to plant life. Such a laboratory can hardly be said to exist at present in this country, unless you include Rothamsted, which for agricultural purposes has been of the greatest possible value. We wish to have a laboratory at Wisley to deal with more strictly garden interests and garden work. Already a very eminent gentleman has offered to institute some experiments there. It will cost us very little beyond a small honorarium. I am not at liberty to mention the details at present, but I can assure you it was an offer which would be received with the greatest possible acclamation by everybody in this room.

Deputations.

The position of our Society in the world of horticulture is more and more being recognised by foreign nations. That is shown by the desire of foreign Societies, when they have meetings, anniversaries, jubilees, or whatever the occasion may be, that we should send deputations to take part in their celebrations. We have received an invitation from Paris to attend the great International Horticultural Exhibition which is to be held in May, 1905. That has been accepted, and, among other good things, it will help to accentuate, so far as horticulture is concerned, the *l'entente cordiale* which already exists between ourselves and our neighbours on the other side of the water. Similarly, we have received an invitation to take part in the Jubilee of the Royal Caledonian Society.

Then we all deeply regret the loss of some very eminent members. One of them, whose memory will always be green with us, and to whom we were greatly attached, was the Dean of Rochester, whose death is a very great loss to horticulture: and there are the Rev. C. Wolley-Dod, Mr. Hermann Herbst, and others.

The State of the Society.

The Report speaks of the gradual increase of the Society. The numerical increase during last year was 914, and the total number of Fellows and affiliated societies is now 8360. There are no fewer than eight pages of affiliated societies, and more and more the country societies are endeavouring to associate themselves with this Society.

The Journal.

I do not think it would be possible to exaggerate one important branch of the Society's work, and that is the *Journal*. The *Journal*, as you know, is a model of what such a production should be. It is very different from what it was a few years ago when we first left South Kensington. Enormous strides have been made in its utility in every shape and way. The *Journal* contains not only a vast number of most interesting papers, lectures and reports, but it is also very admirably illustrated, and I venture to say the labours of our Secretary in editing the *Journal* and in furthering the interests of the Society, it would be impossible to exaggerate. I venture to say that if anyone were called upon to purchase an illustrated volume of such dimensions, he would probably have to pay a guinea for it. The Council are naturally very anxious to again thank the contributors to the *Journal*—the writers, the compilers of abstracts, and others; their work is of the greatest possible value, and that value is recognised by all kindred societies which exchange their publications with the Royal Horticultural Society.

The Lindley Library.

There is one thing in connection with paragraph 17 I must not omit. Not only has the Library been liberally furnished by Baron Schröder, but we have received a donation from a source from which we could hardly have expected. I mean from the Trustees of the Veitch Memorial Medal—a donation of £50 towards the expenses of the Library

Medals.

As to the list of Awards and Medals, I must express the opinion (and I do so with all reserve and with humility) that our Committees are a little too liberal with their Medals and Certificates. I think they total 1,169. The truth of the matter is that every new introduction, or some curious play of Nature, whether it be an interesting seedling or a hybrid, or whatever it may be, invariably makes its *début* at the meetings of this Society, and that naturally leads to the granting of a very large number of Certificates.

The Shows.

I think our show to-day is a type of what our Society is doing. It is hardly possible to exaggerate the interest which our shows are constantly creating. We are deeply indebted to Mr. Jeremiah Colman, who has been kind enough to rob his houses for the time to show what really can be done. Mr. Colman has given pleasure to a vast number of people, and I am quite sure you will agree with me that we owe him and others a deep debt of gratitude for furnishing our shows with such admirable exhibits.

Colonial Fruits.

One new departure in regard to the exhibits has already been made, and that is the exhibition of Colonial fruit. The exhibition we had during the winter was organised at very short notice, and we hope in future that we shall have a much more complete and more interesting exhibition than on that occasion. The next show of colonial fruits will take place on March 30 and 31, and we have every reason to believe that the Colonies will make a very considerable show, as they can do. Not only is the matters of interest to fruit-growers, but it is a very important element in the food supply of the people. Through our Colonies we can get, almost throughout the year, fruit and vegetables which conduce so much to the health of the people, without having to wait for the seasons to come round.

The Summer Show at Chelsea.

After some protracted negotiations we have made arrangements to hold our Summer Show in the grounds of the Royal Military Hospital at Chelsea, on July 11, 12 and 13. Although that place is not, perhaps, so central as the gardens of the Inner Temple, I believe it will be found that there is ample space, and that, after all, the efforts we have made to secure the place will be in the best interests of the Society.

Thanks to Lord Ilchester.

I do not think I ought to leave this subject without asking you, the Fellows of the Society here present, to give a very hearty vote of thanks to Lord and Lady Ilchester for their kindness in past years. We could hardly expect that Lord Ilchester would be able to let us have his grounds every year, and we are greatly indebted to him for what he has done in the past.

The Committees.

There is one duty that remains to me. I ask you to give your cordial thanks to our Committees. The Committees are composed, as probably most of you are aware, of the best experts in the kingdom in their various departments. They travel, many of them long distances, at their own expense, with no charge whatever to the Society. They give valuable time and valuable knowledge to the Society, and we owe them a very great debt of gratitude.

The Staff.

It is impossible to pass away from this subject without asking you also to give a hearty vote of thanks to the staff. We have got the best secretary that any horticultural society ever had, or I would venture to say ever could have. Not only does he work in a way which sometimes astonishes me, but I really should be at a loss to adequately explain to you the burden which has been thrown upon his shoulders during the past year or two. We are greatly indebted to him, not only for that, but for the kindness, courtesy, and consideration with which he does his work; and I am glad to say—and he knows a great deal more about this than I do—that the general staff are always willing to take any amount of trouble, and will work so long as there is work to be done without any questions as to hours. That thought never arises.

Finance.

I will conclude by saying that we have every reason to be thankful for the present position of the Society. We have now an income of £14,000 a year. We made a profit on our working last year of over £5,000, and the ordinary income from subscriptions is not quite £10,000, but it is £1,000 more than the ordinary expenses. I think if you take these facts into consideration there is every reason to be satisfied with the position of the Society; and so long as we continue to work simply and solely for the advancement of Horticulture, so long will the position of the Society be maintained.

Mr. **Arthur Sutton** seconded the adoption of the Report. He said on that occasion of meeting for the first time in their own Hall they could not be too thankful for the extremely happy issue as the result of past deliberations. He should like to propose a most hearty vote of thanks to the Council, who had carried them through this unique work. But for the Council the work would not have been carried through. They knew that at one time the Council did not seem to gauge the feelings of the Fellows, but since they saw what the Fellows wished, and heard some reasons in support of those wishes, the Council immediately took the matter up and carried it through successfully. One thing ought to be mentioned, if during the last two or three years any one had left the Council through not being quite able to fall in with all that was being done, they had at last rallied round the Council. Only one or two matters called for reference. He hoped if anyone present had not yet contributed towards the Building Fund, they would at once communicate with the treasurer.

Of course they were delighted to have Wisley Gardens. The lesson of to-day in matters horticultural was that nothing was impossible; what was needed was united action. They had heard that a substantial sum had been received on account of Chiswick which went a long way towards the expenses of reorganisation. One matter not alluded to by the President was the loss the Society had sustained by the death of Mr. Lloyd—a member of the Council. He was sure they would not like to separate without recording their deep gratitude for what Mr. Lloyd had done during the years he had been in office.

Among the new Vice-Presidents there was one name they were specially pleased to see, and that was the name of Sir John Llewelyn.

Amongst the new holders of the Victorian Medal of Honour, there was one whom they delighted to honour, although they might not agree with all that that gentleman said in the papers—he referred to Mr. Alexander Dean.

The Chairman had referred to invitations from foreign countries. It had often occurred to him and others that although they frequently received invitations, they seldom extended the same courtesy in return. He was looking forward with more hope than ever that this year or next the Council would see their way to inaugurate the largest international horticultural exhibition that had ever been held, and that they should return some of the hospitality to those who had been so kind to them in the past.

Statement by the Treasurer.

Mr. **J. Gurney Fowler**, the Treasurer, next made his statement. He pointed out that the Council could not, of course, bind themselves to the figures in the Report, because it might be found in furnishing the hall and offices that some small expenses would have to be incurred, or that some small structural alteration might be necessary.

Well, what was the position of the Society? Their funds, thanks to the generosity of the Fellows, had largely increased during the past two years. At the end of 1902 the funds, including life compositions, were £16,000. At the present time the funds amounted to £51,119, an increase of £35,120 in two years. This large figure was accounted for as follows:—Donations to Hall, £25,178 8*s*. 8*d*.; donations to garden, £31 19*s*. 6*d*.; life compositions and entrance fees, £1,040 17*s*.; surplus income, £8,866; total, £35,120 5*s*. 2*d*. As to the new Hall, the cost would be as nearly as possible £40,000, and that was the figure which they originally considered they would have to spend. He thought it was satisfactory to them that their estimate had not been to any material extent exceeded.

With regard to Wisley Gardens their cost of making, after setting off the amount they received for the Chiswick Gardens, would be about £690, a very small sum which could be easily met in that room. The increase in the funds during the two years having been £35,120, and the Hall having been erected and the Garden equipped, they were £5,145 worse off than they were in 1902. If these two large undertakings had not been carried out they would have been £9,906 17*s*. better off, so that adding these two figures together the sum of £15,052 3*s*. 10*d*. was required before they could say that the Hall and Gardens had been respectively built and equipped by the liberality of the Fellows and at no cost to the Society. The amount was divided into:—deficiency on new Hall account, £14,396 6*s*. 10*d*.; deficiency on equipment of Garden, £655 17*s*.; and he made once more the appeal which he made last year to Fellows to come and help. It was not the duty of a Treasurer to beg, and he did not like it any more than most Treasurers did, but he supposed that the duty of a Treasurer was to receive all that he could get, and to part with the same only with care and discrimination. They had entrusted him with the honour of being their Treasurer, and he should always feel that he had not fully carried out the duties entrusted to him until he could approach them in general meeting and say that the funds with which they entrusted him were in as good if not in a better position than they were when he took office. Now as to their income, for after all the capital could eventually look after itself if they were able to save a considerable sum annually. They would see from the Report that the surplus of revenue was £5,235 as compared with £3,641 in 1903, and £2,468 in 1902. In the hurry always incident to getting out the accounts and going to press, he regretted that he did not observe that the Revenue Account had not been credited with the Entrance Fees, £426 6*s*. There was no liability of the Society in respect to these, and they were just as much income as are the subscriptions. He had spoken to Mr. Harper, their Auditor, on the subject, and he had agreed to this being altered next year. The income for the year was therefore £5,661 14*s*. 1*d*. This is, he thought, a satisfactory showing. He pointed out, however, that only one number of the *Journal* had been published this year, and that three numbers might come in the next year. If this be the case, their accounts the next year would show about £1,600 additional expenditure under this head. He thought there was nothing else to say of any great importance on the Revenue Account except that it would be observed that the maintenance account of the new Hall since its opening has been £411, and only £10 has been received from lettings. Now as to the future, he had referred to the cost of the *Journal* and now he must call attention to the maintenance of the new Hall.

He thought the annual expenditure would not be much less than £1,800, viz., rent, £690; rates and taxes, £600; house staff, £150; fuel and lighting £150; miscellaneous, £210.

Then as to the Gardens at Wisley. They might cost more to keep up than the Chiswick Gardens, as they were nearly five times as large. They proposed to enlarge the Gardens gradually (not of course interfering with the wild garden at all) by bringing the various fields surrounding the wild garden into cultivation. How much this might cost or when the work would be done it was difficult to say, but there was no rent payable as at Chiswick, and therefore no money was wasted by not working the estate to the full.

The current year would be the worst from a financial point of view that they could see for some time to come. They had undertaken two new enterprises, neither of which could yet be said to have found its footing; but he looked for considerable increase in the letting of the Hall after this year. He hoped that the Garden would show some receipts from sales of fruit, &c., so soon as it is properly established. Bearing these points in mind, and for safety's sake taking credit for no additional subscriptions, he thought they would find that they could make both ends meet, and show a surplus of between £2,000 and £3,000, which should, he thought, be a satisfactory showing.

Speech by Mr. Elwes.

Mr. **Elwes** said he had belonged to the Society for a long number of years, but he had never heard anything like so full, so confidential, and so businesslike a statement from the Treasurer, and he felt quite sure that if they had known the quality and capacity of their Treasurer three years ago a great many of the things which had been said at those meetings would never have been uttered. A great item for conconsideration was the *Journal*. At present that cost about £1,400—a figure which might be doubled in consequence of three numbers of the *Journal* being issued instead of one. He had always steadily upheld the publication of the *Journal*, therefore no one could imagine that he would speak against it. He would, however, suggest that as the *Journal* was said to be worth the whole subscription, it should not be sent to people who did not want it.

The **President**: That is only my own opinion!

Mr. **Elwes** said if an extra guinea were charged the *Journal* would not find its way into the waste-paper basket, as was frequently the case at present, because people when they had paid something for a thing took care of it. There was another point. At the present time their Secretary had thrown upon him a great deal of work which was not expected from any other secretary. Other societies had their Publication Committees. The work of selection of matter for publication was attended to by specialists in the various branches of knowledge. If their Secretary said to a gentleman who had sent in a paper, "You must cut this down," that gentleman might think he had some personal grievance with the Secretary; but a Publication Committee could act without any fear of criticism, and the result would be to limit the quantity and very much improve the quality of the *Journal* which was what they wanted. No one man could read all the horticultural literature which was now published each week, and much of that published in the *Journal* might be eliminated with advantage.

As to Wisley, he did not know whether the Council had had sufficient experience of the soil and climate and other facilities to justify them in saying what could be done best at Wisley. As a private garden it was all right, but they wanted something more than a pretty place where to pass a pleasant day. They wanted a garden to do what Chiswick could not do, and private gardens could not do this because there were no facilities for experiments. Wisley might be made an Arboretum which would perhaps some day be equal to that at Kew. He thought this was a matter which should be settled, not perhaps entirely within the

Council, and that no considerable expenditure should be undertaken until the Fellows had had a chance, he would not say of criticising, but of expressing their opinion on the matter.

The PRESIDENT said the Council was grateful to Mr. Elwes for his support. As to the *Journal*, Mr. Elwes did not seem to make any allowance for country members who got very little more than the *Journal* for their money. If they curtailed the *Journal*, and so reduced expense, some of the country Fellows would be very much grieved, and he was afraid they would cease to belong to the Society. With regard to Wisley, the whole matter had been very seriously considered. The trustees of the Gardens had been placed upon the Gardens Committee by the Council, who thought it was the only suitable compliment that could be paid these gentlemen. As to the Gardens themselves, he thought the situation infinitely superior to that at Kew, and the soil not inferior. Nobody who knew Kew could think very much of the soil, and the Director there was always remarking: "What can you expect from such a deplorable soil?"

The Report and Accounts were then adopted.

The following were nominated as VICE-PRESIDENTS, viz.:—The Right Hon. Joseph Chamberlain, M.P.; the Right Hon. The Earl of Ducie; the Right Hon. Lord Rothschild; Sir Frederick Wigan, Bart.; Sir John T. Dillwyn-Llewelyn, Bart.

The following were nominated as OFFICERS:—Sir Trevor Lawrence, Bart., K.C.V.O., V.M.H., *President;* Mr. J. Gurney Fowler, *Treasurer;* Rev. W. Wilks, M.A., *Secretary;* Mr. Alfred C. Harper, *Auditor.* No other names having been proposed there was consequently no need to ballot, and these gentlemen were duly elected.

Sir JOHN LLEWELYN, Bart., moved, and Mr. DRUERY seconded, a resolution of thanks from that the first annual meeting of Fellows in the new Hall, to Baron Schröder and everyone else who had worked to carry the scheme to a successful issue. The motion was carried with acclamation.

Captain HOLFORD, one of his Majesty's equerries, moved a hearty vote of thanks to the President.

Mr. W. A. BILNEY seconded, and the motion was carried with cheers.

The PRESIDENT, in reply, expressed his thanks.

BRITISH GARDENERS' ASSOCIATION.

In addition to those previously reported, meetings have been held at the following places:—

At Waltham Cross on February 7, Mr. J. Weathers, Horticultural Instructor for Middlesex, in the chair, Mr. W. Watson, Hon. Secretary of the Association, being the principal speaker, it was unanimously resolved to form a local branch of the Association, and gardeners resident in the district who are interested in the movement are requested to communicate with Mr. W. Isbell, 5, St. Mark's Road, Bush Hill Park, Enfield, who has agreed to undertake the duties of Hon. Secretary (pro. tem.)

At Croydon, also on February 7, there was a well-attended meeting of members of the Croydon and District Horticultural Mutual Improvement Society and others, to hear Mr. C. H. Curtis, who is a member of the Committee of Selection of the Association. The objects and programme of the Association, so clearly expounded by Mr. Curtis, met with the approval of the meeting, and it was agreed further to consider the formation of a local branch of the Association at the next meeting of the Society upon February 21.

At Norwich, on February 8, the February meeting of the East Anglian Horticultural Club was addressed by Mr. George Gordon, V.M.H., as a delegate from the Association.

At Leeds, upon February 11, a large gathering of the gardeners of the district assembled at a meeting held under the auspices of the Leeds Paxton Society, to hear Mr. George Gordon, V.M.H., speak upon the "British Gardeners' Association." As a result of the meeting the following resolution was carried unanimously: "That a branch of the British Gardeners' Association be formed in Yorkshire, with Leeds as a centre, and that this meeting pledges itself to give every possible support to the movement." A Committee was elected to actively carry on the work. Mr. George Carver, 75, Northbrook Street, Chapel Allerton, Leeds, was elected Hon. Secretary. As Secretary of the "Professional Gardeners' Friendly Benefit Society," Mr. Carver is well known and respected throughout Yorkshire, and all Yorkshire gardeners interested in the movement are asked to communicate with him.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 2.—S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited some Cypripediums, the best of which was C. × Euryades "Gratrix's variety," a very handsome form. Dendrobium × Ainsworthii "Gratrix's variety" was shown from the same collection.

Mrs. S. GRATRIX exhibited Cattleya Trianæ var. Mrs. S. Gratrix, of good form, and of very pleasing character (Award of Merit); also Cypripedium × Briton, a hybrid between C. × Calypso × C insigne Harefield Hall variety (Award of Merit).

W. THOMPSON, Esq., Stone, Staffs. (gr., Mr. Stevens), sent a small but very good collection of Odontoglossums. O. × Vuylstekei Walton Grange variety being magnificent, was unanimously awarded a First-class Certificate. A fine plant of O. crispo × Harryanum with a spike over a yard long, with two branches, was awarded a Cultural Certificate. A Vote of Thanks was awarded for the group.

A. WARBURTON, Esq., Haslingden (gr., T. Raven), exhibited one of his own hybrid Odontoglossums, which was the product of crossing O. crispum var. Lindeni with a rose-coloured variety of O. crispum; the flower was small but well marked, and no doubt when the plant has grown strong it will be a valuable addition to the spotted forms (Vote of Thanks).

Messrs. SANDER & SONS, St. Albans, exhibited Cypripedium × Orion var. bella, a very pretty and distinct hybrid between C. concolor and C. insigne var. Sanderæ, showing the characters of both parents very plainly (Award of Merit).

Messrs. H. LOW & Co., Enfield, staged a few good plants, including Cypripedium × Mrs. Tautz (Award of Merit). Cypripedium × Minos Low's variety was shown also in a well-grown and well-flowered plant. A Vote of Thanks was awarded for group.

Father CROMBLEHOLME, Clayton-le-Moors, exhibited Cypripedium × Esperanda. *P. W.*

THE HORTICULTURAL CLUB.

ANNUAL MEETING AND DINNER.

FEBRUARY 14.—Much enthusiasm was shown by the members of the Horticultural Club on Tuesday last, the occasion being the annual meeting and dinner.

The annual meeting commenced at 5 P.M. in the Club room, Hotel Windsor, Westminster, when a satisfactory report was presented by the Committee. During the past year ten members have resigned, chiefly owing to the distance at which they reside from London, but nine new members were elected.

The papers read at the monthly meetings included the following: "The Use and Abuse of Botanising," by the Rev. Prof. HENSLOW, M.A., F.L.S.; "Back to the Land," by T. W. SANDERS, F.L.S.; "Himalayan Rhododendrons for English Gardens," by Sir JOHN LLEWELYN, Bart.; "Indian Primulas," by Sir GEORGE WATT, K.C.S.I.; "Gilbert White and the Selborne Society," by Prof. BOULGER, and "Syria and the Holy Land," by JOSEPH CHEAL. In July the members and friends visited East Burnham Park, the residence of Mr. and Mrs. Harry Veitch, and the annual outing there was much enjoyed. The party also inspected some fine trees at Langley Park.

The report was accepted with satisfaction.

All the officers were re-elected, excepting that Messrs. W. A. Bilney and Chas. E. Pearson were elected members of the Committee in place of the Rev. H. R. Burnside and Mr. Hudson, who have retired. A cordial vote of thanks was passed to the Hon. Secretary, Mr. E. T. Cook.

About eighty ladies and gentlemen sat down to dinner at 6 P.M., and Sir JNO. T. D. LLEWELYN, Bt., President of the Club, presided, supported, on the right hand by Mr. Harry J. Veitch, and on the left by Mrs. Veitch.

Owing to the kindness of Messrs. Jas. Veitch & Sons, the tables were plentifully and tastefully adorned with plants and flowers, and the event being also graced by the presence of a large number of ladies, the scene was a very pretty one.

After the Royal toasts had been honoured, Mr. GEO. PAUL proposed that of "The Royal Horticultural Society" in a capital speech, in which he referred to the events of that day, and to the flourishing condition of the Society. The Council and Fellows were now one body and one party; grumbling had ceased. And why should it not? They had now a Hall that was all they could wish it to be, and a garden that was likely to become all they could wish it to be. He anticipated the time when Wisley would become the centre of horticultural teaching in this country, when England, too small for farms, would be a vast garden.

Mr. W. A. BILNEY responded, and said that was the sixth occasion that day upon which he had had to do with horticulture, such was the work that befell members of the Royal Horticultural Society's Council. Mr. BILNEY went on to speak of individuals who had helped very materially in Royal Horticultural Society work recently, including Mr. H. J. Veitch and Mr. H. B. May. The speaker quite agreed with what Mr. Paul had said in regard to Wisley, and stated that the Council that day had decided to accept the offer of a famous gentleman to commence scientific research work there.

Sir JOHN LLEWELYN proposed "The Horticultural Club," and reviewing the work of the past year showed that much good work was being done. Referring to the former Secretary, Rev. H. H. D'Ombrain, Sir John said those present would be glad to know that he was in good health, and that the Committee had that day sent a telegram of congratulation to the reverend gentleman. Dr. Henry would shortly give a paper at the Club upon "Forests wild and cultivated," illustrated with lantern slides.

Mr. JEFFRIES responded, and gave some interesting particulars of the early history of the Club.

Mr. GEORGE MONRO, in proposing "The Visitors," referred to the frequent use of the Club-room by different societies, and said that it should be known as "The National Home for National Societies." The National Potato Society and almost every other national society used their room. Mrs. Monro had just suggested to him that the art of cooking Potatos was as important as that of cultivating them, and he therefore proposed that a National Potato Cooking Society be formed, and that Mrs. Harry J. Veitch become the first President.

Other toasts included "The Chairman," proposed by Mr. H. J. VEITCH, who said that the dinner was the seventh horticultural function he had attended during the day; "The Secretary," &c., and being interspersed with songs by "The Georgian Singers," and a humorous recitation by Mr. C. T. Druery, the proceedings were greatly enjoyed.

NATIONAL CHRYSANTHEMUM.

A MEETING of the Executive Committee was held at Carr's Restaurant on the 13th inst., Mr. Thomas Bevan presiding. The Secretary read a letter from Mr. C. E. Shea, President, regretting his inability to attend the Annual General Meeting on the 6th inst., thanking the members for re-electing him as President, and for their resolution of sympathy with him in his illness. A letter was read from the Secretary of the Crystal Palace Company confirming the dates of the three shows at Sydenham, namely, October 4 and 5, November 1, 2, and 3, and December 6 and 7. A financial statement was submitted showing a balance in hand of over £40. An election to seven vacancies on the Floral Committee was the next item on the agenda. A letter was read from Mr. C. Gibson, of Mitcham, an old member and exhibitor, who for many years had occupied a seat on the Executive and Floral Committees, withdrawing his name from the latter body. The Secretary was instructed to convey to Mr. Gibson the regret of the Floral Committee that circumstances had occasioned his withdrawal from that Committee, and to express to Mr. Gibson an appreciation of the excellent services he has rendered to the Society for many years. The following were re-elected on the Floral Committee:—Messrs. G. Prickett, W. Higgs, J. Lyne, and R. Kenyon; and Messrs. C. H. Curtis, G. Gover, and C. J. Ellis were elected to fill vacancies. Judges were appointed for the three exhibitions in the present year. It was resolved that a list of new varieties of the leading sections of Chrysanthemums be prepared for the Annual Report, Messrs. C. H. Payne, Crane, and Curtis undertaking to prepare the same.

The Market Show Committee made a report to the effect that a market show be held on December 13 next on the same lines as that of 1904; that the exhibits be confined to Chrysanthemums; that application be made for the use of the French Flower Market, Covent Garden, for the use of the show; that the last Committee be re-appointed with the addition of some leading market growers and salesmen. The report was unanimously passed.

The Schedule Revision Sub-committee made a report showing some alterations in the wording of several of the classes at the October show; while the conditions of the Affiliated Societies' Trophy Class in November was materially changed in the hope that the alteration would bring an increased competition in the future. The condition now reads, "A table of Chrysanthemums representative of not fewer than four sections, to fill a table space 18 by 3 feet, the flowers to be shown in vases.

It was resolved that the annual outing during the summer take the form of a water-trip from Staines to Windsor, application to be made to His Majesty the King for permission to visit Frogmore.

⁂ In our report of the annual meeting last week, we should have stated that Mr. Thos. Bevan was re-elected Chairman of the Executive Committee, on the proposition of Mr. Foster.

ROYAL GARDENERS' ORPHAN FUND.

FEBRUARY 10.—The annual meeting of the subscribers to the Royal Gardeners' Orphan Fund was held on Friday, the 10th inst., at "Simpsons'," Strand, London. There was a moderate attendance. Mr. H. B. May, Chairman of the Committee, presided over the proceedings.

REPORT OF THE EXECUTIVE COMMITTEE.

In presenting their Seventeenth Annual Report, the Executive Committee has again the pleasure of congratulating the supporters of the Fund upon a year's record of steady progress and enhanced usefulness. They could have heartily welcomed a larger measure of financial support, especially from the class whose children alone derive the benefits of the Fund; but in the face of the "hard times" it is a matter for congratulation that the revenue (exclusive of legacies, &c.) shows an increase of some £35.

As will be seen from the accounts presented herewith, there has been a slight increase in annual subscriptions, which is unhappily considerably more than counterbalanced by the falling off under the general heading of donations. This the Committee greatly deplores, for the reason that the deficiency is attributable mainly to the smaller amounts obtained by means of collecting boxes, the sale of flowers, &c., at exhibitions, musical entertainments, and the opening of private gardens for the benefit of the Fund. On the other hand, the collection at (and in consequence of) the Annual Festival amounted to a larger sum than has resulted from any festival held since 1896.

The payments made on account of the children show an increase over the amount paid in the previous year of £74 10*s.*, largely owing to the increased number of candidates who required assistance while waiting for election. The Committee consider it extremely desirable that they should be placed in a position to meet the numerous pressing applicantions for assistance made under Rule 14, and again earnestly appeal to those most nearly interested in the matter for a larger measure of support to enable them to do so. It is the Committee's experience that in most of the cases that come before them the poor widows and children are left almost destitute, and most pitifully apply for help, that the Committee has been glad to grant assistance when possible, and to give promptly, thereby enhancing its value, but with so many claims coming upon them, it would seem that in the near future it may happen that this much-needed help will not be forthcoming without some increase in the annual subscriptions.

The number of orphans who have been elected to receive the benefits of the Fund during the past sixteen years is 189, and the total amount expended in allowances during the same period is £13,522 17*s.* 6*d.* At the commencement of the year the number of children receiving the full weekly allowance was eighty-eight, and ten were added to the list by election at the annual meeting. The number on the Fund on December 31 was ninety-three, while twenty-nine of the candidates waiting election were receiving temporary assistance.

The usefulness of the Fund has never been made more apparent than is evidenced by the greatly increased number of candidates seeking election at this meeting, and it is a source of keen regret to the Committee that the funds at their disposal do not justify them in recommending the election of more than fifteen—fourteen by election in the usual way, and one by resolution to receive the allowance from the "Emma Sherwood Memorial."

With a deep sense of gratitude the Committee once more acknowledge the munificent support accorded to the Fund by its Treasurer, Mr. Sherwood. In addition to a most generous annual subscription, Mr. Sherwood provided the means for placing a child on the Fund at the first election held in 1888, and has since maintained another child for ten years, by an annual payment, as an "Emma Sherwood Memorial." To these benefactions Mr. Sherwood has added a munificent gift of £500 to endow the "Emma Sherwood" Memorial in perpetuity; and the Committee feels assured that their heartfelt thanks to Mr. Sherwood will be shared in by every well-wisher of the Fund, and doubtless also by the poor orphan children for all time to come who will benefit under the trust.

The Annual Festival held on May 17, under the presidency of Sir Trevor Lawrence, Bart., K.C.V.O., again proved a most gratifying success. It seemed specially appropriate, in the Centenary year of the Royal Horticultural Society, that the President of that Society should occupy the chair and plead the cause of the poor orphan children of gardeners; and the Committee most gratefully acknowledge the great service which he rendered the Fund on that occasion, as his sympathetic appreciation of the good work done by the Fund and his warm-hearted appeal for aid in its support resulted in a subscription list amounting to £818 18*s.*, the largest amount collected at any Festival since 1896.

With very great pleasure the Committee make the announcement that the next Annual Festival will take place at the Hotel Cecil on Thursday, May 11, when, for the first time in the history of the Fund, the chair will be occupied by a Scottish nobleman—the Right Hon. the Earl of Mansfield having most kindly consented to preside on that occasion. The Committee feels assured that the well-known interest which Lord Mansfield takes in horticulture and arboriculture will ensure a record attendance, and that they will have the pleasure of welcoming many of their northern friends, and of receiving the cordial support of all interested in the welfare of the Fund on this occasion.

With very sincere regret the Committee records the death of one of the founders of the Fund, and for some years one of their most esteemed colleagues, in the person of Mr. Herman Herbst, of Richmond, whose genial presence in Committee and whole-hearted interest in the Fund at all times and seasons will remain a cherished memory with all who had the pleasure of being associated with him. A generous benefactor during life, Mr. Herbst did not forget the poor children in death, having left a legacy to the Fund of £100.

To the numerous local secretaries who continue to assist the Fund, often at the cost of much labour and inconvenience to themselves, and not infrequently under somewhat disheartening circumstances, the Committee again tender their warmest thanks; and especially do they desire to place on record their cordial acknowledgment of the great service rendered to the Fund by Mr. R. Scott, gardener, Moorfield, Manningham, who from the inception of the Fund has been Local Secretary for Bradford, and who on leaving the district has, much to his regret, been compelled to resign. Mr. Scott has ever been most energetic in pressing the claims of the Fund upon his neighbouring brother gardeners, especially at the meetings and exhibitions of the Bradford Chrysanthemum Society, and the Committee much regrets the loss of so enthusiastic a fellow-worker.

The members of the Committee who retire by rotation are Mr. W. R. Alderson, Mr. George H. Barr, Mr. George Cuthbert, Mr. William Howe, Mr. John Lyne, Mr. William Poupart, Mr. T. W. Sanders, and Mr. W. P. Thomson, and all being eligible, offer themselves for re-election.

To the Auditors, Mr. M. Rowan and Mr. P. Rudolph Barr, the best thanks of the Committee are again tendered for their valued services in auditing the accounts. Mr. Barr is the retiring auditor, and is nominated for re-election.

CASH STATEMENT

RECEIPTS.

	£	s.	d.	£	s.	d.
To Balance last Account ...				832	7	9
" Subscriptions: General ...	269	10	3			
" " Local Secretaries ...	52	2	6			
				321	12	9
" Donations: General ...	126	16	10			
" " Local Secretaries	12	3	6			
				139	0	4
" Special Gift by N. Sherwood, Esq., to endow the "Emma Sherwood Memorial"				500	0	0
" Legacy: H. Herbst, Esq. ...				100	0	0
" "Emma Sherwood Memorial"				13	0	0
" Annual Dinner				817	18	0
" Advertisements in List of Subscribers				27	19	0
" Dividends on Stock and Interest on Deposit ...				321	10	5
" Income Tax returned ...				15	8	3
				£3,088	16	6

NOTE.—INVESTMENTS.

	£	s.	d.
3 per cent. London & County Consolidated Stock	£7,240	15	10
3 per cent. Canada Stock	2,000	0	0
L. & N.-W. Railway Preference Stock ...	340	0	0
Great Indian Peninsula Railway Guaranteed 3 per cent. Stock	514	0	0
Thomson Memorial Trust:			
East Indian Railway B. Annuity of £14, cost	430	11	0
2½ per cent. Consols	380	12	2

EXPENDITURE.

	£	s.	d.	£	s.	d.
By Allowances to Orphans ...	1,198	5	0			
" Grants in Aid	118	15	0			
" Emma Sherwood Memorial	13	0	0			
				1,330	0	0
" Annual Dinner				193	4	11
" Secretary's Salary				125	0	0
" Printing and Posting List of Subscribers				35	1	0
" Printing and Stationery ...	42	0	8			
" Rent and Insurance... ...	26	3	6			
" Annual General, and Committee Meetings	17	9	8			
" Postages	8	18	0			
" Bank Charges	1	7	0			
" Sundry Expenses (Petty Cash)	2	16	3			
				98	15	1
				1,782	1	0
" Balances: Cash at Bank ...	948	14	7			
Cash on Deposit	225	0	0			
Cash in Hand ...	133	0	11			
				1,306	15	6
				£3,088	16	6

Having inspected the Securities and examined the Books and Vouchers supplied to us, we hereby certify the above Account to be correct.

P. RUDOLPH BARR } *Auditors.*
February 7, 1905. M. ROWAN }

The CHAIRMAN, in moving the adoption of the Report, congratulated the subscribers upon the fact that, although the times had been hard in the past year, the receipts to the Fund had been increased. At the same time the Committee was alarmed at the disproportion between their income from annual subscriptions and those from donations, annual festivals, and other more or less precarious sources. The responsibilities the Committee were called upon to undertake increased by leaps and bounds; they were that day only able to elect about one-half of the candidates, although all were deserving of relief. The powers vested in the Committee of helping candidates whilst waiting for election, by granting them 2*s.* 6*d.* per week, had been employed with beneficent results, but unless more financial support was forthcoming, it appeared likely that this could not be continued, at any rate in the degree that was now done. The Annual Festival might not always prove such a "bumper" [source of income] as it had previously been, and then where would they be? He (the Chairman) pleaded for more annual subscriptions from gardeners and employers of gardeners. An income derived from such subscriptions would furnish a more satisfactory basis for the Fund to rest upon. Mr. May gratefully alluded to the good service rendered to the Fund by Sir Trevor Lawrence by the interest and sympathetic support he gave when presiding at the last annual festival dinner—an event that proved so successful. In connection with that dinner the Secretary (Mr. Wynne) wrote to the lady members of the Royal Horticultural Society, setting forth the claims of the Institution, and asking their help; but although there are about 502 such members, the amount received from them was hardly sufficient to pay for the cost of postage! We believe with Mr. May that if it could be brought home to these ladies what excellent work the Fund is doing they would not be found wanting in sympathy for the orphans it is the purpose of the Fund to assist.

The CHAIRMAN gave a few particulars of the career of one of these orphans, who b– the grants from the Fund had been enabled to complete his schooling in a satisfactory manner, and had since obtained many certificates for proficiency in the theory and practice of plumbing (see p. 40).

Mr. W. MARSHALL (formerly Chairman of Committee) seconded the adoption of the Report and subsequently called attention to the great increase there is in the practice of nominating two children of one family at one election. He thought that when all could not be helped, it was better to assist two widows by giving them five shillings per week than one widow by giving her ten shillings per week. He had been a member of the Committee for ten years and was well aware of the pains that were taken to sift the cases that came before that body, and he only raised the question in order to draw the Committee's attention to it, being convinced they would do what may prove to be desirable in the matter. Mr. A. DEAN supported Mn. MARSHALL in ventilating this question, and said that on the list of candidates that day there were nine couples.

The Chairman referred to previous discussions on this question, and to a letter received from the Bournemouth Gardeners' Association in 1904 and again that day, in favour of preventing the election of two candidates from one family. Mr. MAY said that he would assure them that if in the interests of the Fund it became necessary for the Committee to have power to refuse two nominations from one family, he would ask the subscribers for that power.

Mr. LYNE struck another chord when he said that often more charity was exercised in relieving two children in one distressful home in which there might be six or seven children, than one in another home where perhaps there were only two.

Mr. H. J. VEITCH thought the best thing to do would be to decide to reject the second nomination until the child nominated first had been elected.

ELECTION OF OFFICERS.

Mr. H. J. VEITCH proposed that Mr. N. N. Sherwood be re-elected Treasurer, and that he be thanked for his past services and for his great liberality always. During the past year he had given £500 to endow the Emma Sherwood Memorial.

Mr. ALDERSON having seconded the motion, it was adopted with acclamation.

Mr. Rudolf Barr was re-elected to servo as Auditor, on the proposition of Mr. HOWE, seconded by Mr. WITTY.

The retiring members of the Committee were re-elected, on the proposition of Mr. A. DEAN, seconded by Mr. BATES.

In proposing the re-election of Mr. B. Wynne as Secretary, the CHAIRMAN paid a high and deserved tribute to the manner in which Mr. Wynne carried out his work. When the motion had been seconded by Mr. T. W. SANDERS, it was carried unanimously.

Scrutineers were then elected to examine the ballot-papers, and the meeting adjourned.

PENSIONERS ELECTED TO THE FUND.

When the meeting reassembled the Chairman declared the result of the poll as counted by the scrutineers. This was as follows:—

1.	HOGAN, FRANCIS THOMAS	327
2.	KEMPSELL, WINIFRED ALICE ...	302
3.	MANN, DORIS MAY	302
4	MANN, MARGUERITE JANE	284
5.	RYDER, BEATRICE MARY	276
6.	COOMBES, FREDERICK	257
7.	DAY, ERIC CHARLTON	249
8.	PARKER, DOROTHY ELIZABETH ...	249
9.	BEST, ARTHUR VICTOR	220
10.	RYDER, CHARLES EDWARD ARTHUR	212
11.	HOGAN, WILLIAM BENEDICT	200
12.	GILLETT, ELIZABETH	178
13.	PECKITT, NORMAN ALEXANDER ...	172
14.	FOOTE, FRANK	167
	HARDES, BESSIE	158

The Chairman then declared the first fourteen names to have been duly elected, and announced that the Committee have selected Bessie Hardes to benefit under the Emma Sherwood Memorial Endowment. This child represented one of the most necessitous cases, and until a few minutes before the poll was closed, was among the fourteen successful candidates. The unsuccessful candidates, and the number of votes recorded for them, were as follows:—

Sparkes, Albert Richard, 145; Day, Arthur Leslie, 108; Page, Albert Edward, 104; Bundy, Olive Gertrude, 95; Stride, Doris Evelyn, 85; Hardes, Thomas Arthur, 69; Warwick, Percy E. S., 60; Reid, Arthur, 59; Tilbury, Ena Mary, 54; Warwick, Ivy Constance, 43; Boyce, Charles Alfred, 40; Mullens, Mary Eliza Marguerite, 32; Harrison, William Stanley, 25; Mullens, William Henry Norton, 26; Reid, Mary Janet, 20; Stride, John Edgar, 17.

The Friendly Dinner.

At 6 o'clock P.M. the Committee and a few friends met at the same Hotel and dined together. Mr. H. B. May, Chairman, presided, and the proceedings, which were enlivened by a few songs, were of the most cordial description.

GARDENERS' DEBATING SOCIETIES.

WORTHING AND DISTRICT HORTICULTURAL.—The first meeting of this newly-formed Society was held on February 2, under the Chairmanship of the President, Alderman E. T. Cooksey, J.P. Mr. C. Short, Broadwater Hall Gardens, gave an able and instructive paper on "The History and Cultivation of the Chrysanthemum." He described in detail the best time and the proper manner of taking the cuttings, also the methods of potting and watering these plants. The lecturer also gave information on the best methods for combating such pests as the rust disease, greenfly and mildew. *C. E.*

CHELMSFORD AND DISTRICT GARDENERS'.—At the weekly meeting on Friday, the 10th inst., under the presidency of Mr. Simpson, Mr. F J. Chittenden gave a paper on "Gardening in Olden Times." Gardening was followed by the Egyptians, the Jews, and the Romans, the last-named of whom brought the art to England. Later the monks grew in their herb gardens plants for food and for medicine; but flowers for beauty were not grown till about the year 1500. In the fourteenth century manor and farm-houses had a garden attached in which were grown Onions, Leeks, and strong-smelling herbs. Under Elizabeth flowers began to be cultivated for their beauty. The first record of gardening "accounts" dates from about the year 1340, and the first treatise on gardening was written by John Gardener in 1400. Robert Salle was an authority on grafting in the fifteenth century: while Parkinson wrote his work in 1629. A discussion followed. *S. M. C.*

GARDENING APPOINTMENTS.

Mr. W. Morgan, for several years Gardener at Sharston Hall, Northenden, Cheshire, as Gardener to Sir Wm. Eden, Bart., Windlestone Hall, Ferryhill.

Mr. W. R. Cox, for the past seven years Foreman at Aldermaston Court, Reading, as Gardener to W. Parrott, Esq., Barton Court, Kintbury, Newbury, Berks.

Mr. G. W. Cummins, formerly Head Gardener at Wallington, Surrey, and at Balmedie, Aberdeen, has been appointed Head Gardener to Leigh Goldie-Taubman, Esq., The Nunnery, Douglas, Isle of Man, the appointment dating from February 1, 1905.

Mr. W. H. Keary, for eleven years Gardener at Carlton Hall, Saxmundham, as Gardener to Sir Hugh Wyndham, Royals Lodge, Petersfield, Hants.

Mr. Wm. Roberts, for over two years Foreman at Delamere House Gardens, Northwich, as Gardener to Roscoe Brunner, Esq., of Belmont Hall, Northwich, Cheshire. [Thanks for contribution of 2s. to the Gardeners' Orphan Fund. Ed.]

Mr. F. Sherwell, recently employed at Messrs. John Peed & Son's Streatham Nurseries, as Head Gardener at "St. Marys," Wokingham, Berks.

Mr. A. E. Wallace as Gardener to J. Gwynne, Esq., Kenton Grange, The Hyde, N.W.

Mr. G. Page, late Gardener at Silwood Park, Ascot, Berks., and previously of Rossett Holt, Harrogate, as Gardener to G. S. Lysaght, Esq., Nynehead Court, Wellington, Somerset.

Mr. G. J. Dymott, for the past year and ten months Gardener to G. D. Newton, Esq., Croxton Park, St. Neots, as Gardener to Henry Adams, Esq., Cannon Hill, Bray, Maidenhead.

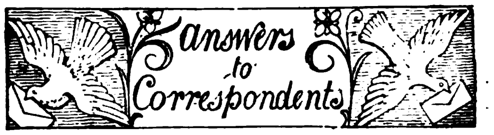
Mr. Thomas McMinn, Foreman in the Gardens, Belladrum, Beauly, N.B., and previously Foreman for over three years in the Gardens, Oakmere Hall, Hartford, Cheshire, as Gardener to Captain Hawkes, Achnayairn House, Invernesshire, N.B.

Mr. A. E. Horton, late Gardener to H. H. Platten, Esq., Harwood Hall, Upminster, as Gardener to T. L. Boyd, Esq., North Frith, Tonbridge.

Mr. G Preston, late General Foreman, The Grove Gardens, Stanmore, as Gardener to Sir William Crump, Glenthorne, Harrow Weald, Middlesex.

Mr. Henry Burfoot, late Foreman at Chevening Park Gardens, Sevenoaks, Kent, and recently employed in Messrs. John Peed & Son's Nurseries, as Gardener to The Lady Waechter, The Terrace House, Richmond, Surrey.

Mr Clarke, recently employed at The Streatham Nurseries of Messrs. John Peed & Son, as Gardener to J. S. Manley, Esq., Rutland Lodge, Brixton, S.W



Answers to Correspondents

Apples: *D. F.* There are two well-known varieties of Apple to which the word "Duchess" might apply. One of these is Duchess's Favourite, an early dessert Apple of rich red colour, grown in considerable quantities in Kent for the supply of the London market. The other is Duchess of Oldenburg, also an early ripening Apple, used by some for cooking and by others for dessert. The skin of this Apple is greenish-yellow in colour, but streaked with irregular markings of red, very different to the unbroken colour of Duchess's Favourite. Which of these is meant by "Duchess" we cannot be sure, but should be inclined to think that it is Duchess's Favourite.

Books: *J. V., Holland.* There is no book in the English language especially for the teaching of business correspondence for young gardeners.

Carnation Seedling: *W. T.* The flower you send has no special merit, and is inferior in quality to others already in commerce.

Carnations: *F. P.* We think the circumstances you mention are sufficient to account for the appearance, but we also see traces of red-spider and of thrips.—*A. G. F.* We find traces of eelworm in the leaves. Turn them out and bake the soil.

Charity: *A. G.* The postal order for 1s. 6d. has been placed in our collecting-box for the Gardeners' Royal Benevolent Institution.

Currant Shoots: *W. & J. B.* The shoots you enclose are affected with the Currant-bud mite, See illustration in our issue for January 14, p. 31.

Gardener's Notice: *Mona.* If the gardener devoted his whole time to the service, and worked in the house occasionally, we think he would be entitled to one month's notice.

Glasshouses in Nursery: *F. G.* We are not aware that the phrase "500 feet run of glass" has any other meaning than the obvious one. This is that if the houses were placed end to end they would extend for a length of 500 feet. By such a phrase no indication is afforded of the width of the houses or of the character of the roofs, which may be span-shaped in some and sloping from a wall in others. If the word "run" were omitted the sense and meaning might be the same, but its employment definitely indicates that square feet are not intended.

Grubs in Mint Roots: *T. W.* The grubs or larvæ are those of the garden swift moth, Hepialis lupulinus. Your better course will be to dig up the roots and transplant them on fresh ground, taking care at the same time to remove all the grubs you can find and destroy them. As a means of preventing the moths laying their eggs on the newly planted ground you might soak some old rags in paraffin and place them at intervals among the plants. This should be done early in May; or if practicable you might protect the plot with freshly tarred fish-netting. Apply to the infected ground a good dressing of lime and soot, and fork it over.

Hyacinth Bulbs: *G. C.* The bulbs are swarming with bulb-mites. Destroy the bulbs by fire, and bake the soil before you use it again (see p. 40 of our present volume). The plant is Helxine Soleirolii.

Lady Gardener: *E. C. C. D'O.* If you will apply to Mrs. T. Rothera, The Gardens, Burton Joyce, Notts, she will furnish the particulars you require; or write to Messrs. Ramsbotham & Co., Bletchley Nurseries, Bucks.

Names of Fruit: *Cultus.* Tower of Glamis.—*R. W.* 1, Hoary Morning; 2, Striped Beefing; 3, Gipsy King.—*Eiffel.* 1, Minchull Crab; 2, Annie Elizabeth.—*W. G. Canning.* Langton Nonsuch.—*C. L. B.* 1, Gascoyne's Scarlet Seedling; 2, Borsdörffer Seedling; 3, Ribston Pippin; 4, Cox's Orange Pippin; 5, Castle Major; 6, Tom Putt.

Names of Plant: *J. A.* Tulip Couleur ponceau.—*L. McC.* (from last week). Trachelospermum jasminoides var. variegata.—*Cultus.* Jacobinia chrysostephana.—*W. D.* 1, Begonia manicata; 2, Strobilanthes anisophylla; 3, Isoloma hirsutum; 4, Adiantum gracillimum.—*R. W.* Cordyline species, leaf only; Pteris serrulata cristata; Asplenium bulbiferum. The last-named is the Fern which bears young plants on the fronds. Why not number the specimens?—*F. C. P., York.* Cattleya Trianæ.—*W. H. H., Leeds.* Odontoglossum gloriosum of the best type.—*A. R.* 1, Odontoglossum Lindleyanum; 2, O. luteo-purpureum; 3, Masdevallia tridactylites.—*J. P.* A very fine variety of Cattleya Trianæ.—*C. P.* You should number the specimens. Pteris longifolia; Fuchsia procumbens, with fruits. Tetramicra (Leptotes) bicolor the Orchid; Acokanthera spectabilis, the white flower; Sedum carneum variegatum.—*C. J. P.* 1, Codiæum (Croton) trilobum Disraeli; 2, C. augustifolium major; 3, C. irregulare; 4, C. Weismanni; 5, C. pulcherrimum; 6, C. spirale.—*A. H. B.* Iris reticulata Krelagei.—*Constant Reader.* Varieties of Camellia japonica.—*J. H. P.* 1, Juniperus communis; 2, Tacsonia Van Volxemi; 3, Retinospora plumosa of gardens; 4, Thuya gigantea, the true plicata; 5, Cotoneaster microphylla; 6, Escallonia macrantha.—*W. R.* 1, Thuya occidentalis; 2, Thuya gigantea, the true plicata; 3, T. orientalis var.; 4 and 5, Cupressus Lawsoniana; 6, Juniperus excelsa.

Potting Cattleyas: *T.* A safe time to repot the specimens of the large-flowered Cattleyas is when young roots are proceeding from the newly-formed growths. The plants should be kept rather dry until well advanced in growth. Over watering in any stage of growth is very detrimental to most Cattleyas.

Potatos for Naming: *Knighton.* We cannot undertake to name varieties of Potatos. Send them to a trade grower.

The Propagation of Clematis: *Desperandum.* Clematises are easily increased by grafting. First of all obtain good healthy roots upon which to work the scions. If you have any old specimens in the garden, or plants of the common species, C. flammula or C. vitalba, it will be an easy matter to dig up a supply of roots, the pieces of which should be from 4 to 6 inches in length, about the thickness of a quill, and if well furnished with fibres so much the better. The scions may be taken from old as well as from new wood, but the latter is preferred. Each scion should be limited to one joint or a pair of eyes, just below which a wedge-shaped cut or a simple straight cut rather less than 2 inches, long should be made, and the scion then immediately placed in position and securely tied with narrow matting in a damp condition. They will then be ready for potting-up, and in order to get the roots into small pots it will be necessary to wind them round, but in doing so be careful not to loosen or injure the scions. It will be advisable to plunge the pots in cocoa-nut fibre or tan in a light propagating case kept closed and having a temperature of about 65° to 70°. Sprinkle the pots overhead with a fine rose water-can occasionally. If water collects on the undersides of the glass it should be wiped off with tiffany every morning, or damping off the plants will result. As growth increases a small stake should be applied to each plant, air admitted by degrees, and later on the plants should be placed in a cold frame.

Tulips Diseased: *G. V. O.* The plants are attacked by a fungus allied to the one that causes the Snowdrop disease (Botrytis galanthina). All diseased bulbs should be destroyed, and the remaining ones dusted with flowers-of-sulphur. See *Gardeners' Chronicle* for March 2, 1889, p. 2.

Communications Received.—Jno. T. (you do not furnish us with the necessary details of your appointment)—C. R.—Mill Hill—J. C. W.—Improver—C. S. & Co.—G. K.—W. H. E.—X. Y. Z.—W. C. W.—J. C. & Co.—G. W.—L. G.—W. W. P.—W. H.—C. H. S.—H. W. W.—R. P. B.—J. M.—H. L.—W. J. V.—G. W. R.—W. W.—H. P.—C. H.—H. Smith—F. J. C.—G. B.—J. H. V.—M. L. (next week)—Harrison Weir—W. G. S.—D. R. W.—A. D., Birmingham.

(*For Markets and Weather, see p. vi.*)

THE
Gardeners' Chronicle
No. 948.—*SATURDAY, Feb.* 25, 1905.

CONTENTS.

Aquatic plants, new ... 121
Apples ... 115, 116, 124
Apples, seedless ... 121
Azaleas, grafting ... 123
Books, notices of—
  Beehives and Bee-keepers' Appliances... 118
  Journal of Agricultural Science ... 120
  Publications received 122
  Vegetables and their Culture 117
Colonial notes... ... 117
Cranberries for market supply 126
Cyclamen, proliferous 117
Cymbidium Sanderi ... 115
Ferns, tree, in the open 124
Fruit register 115
Gardening, the pleasures of 113
Hall, the Royal Horticultural 124
Harper Adams College 121
Horticultural and Agricultural over-sea supplies for January 122
Market gardening ... 123
Measures, market ... 124
Onions, a scarcity of... 125
Orchid notes and gleanings—
  Orchids at Burford 116
Peaches, early... ... 125
Pear, Virginie Baltet . 116
Pears, stewing, the value of 114
Pelargonium "Madame Crousse" ... 116
Plant-collecting in China 113
Potatos 125
Scaphyglottis Cogniauxiana 121
Science, cultural ... 120
Seed-packing 124
Shrubs, transplanting 124
Societies—
  Gardeners' Debating 126
  Linnean ... 120, 126
  Royal Horticultural 120
  (*Scientific Committee*) 126
  Royal Meteorological 126
  West Indian Agricultural Conference... 123
Spraying fruit-trees ... 121
Tomato trade, the ... 121
Undermount, Bonchurch, Isle of Wight 122
Vanda, a new species of... 123
Vegetables—
  Rotation of kitchen garden crops ... 123
Wallflower, a white ... 124
Week's work, the—
  Apiary, the 119
  Flower garden, the 119
  Fruits under glass... 119
  Hardy fruit garden 119
  Kitchen garden, the 118
  Orchid houses, the 118
  Plants under glass... 118
Welbeck, new gardener for 121

ILLUSTRATIONS.

Cyclamen flower, an interesting malformation in a 117
Cymbidium Sanderi, a new species from Annam ... 115
Group of a stellate variety of Primula sinensis, grown at Undermount, I.W. (Supplementary Illustration).
Ivy leaved Pelargonium used for decorative effect on a house-front at Ventnor 116
Vanda Watsoni, a new species having white flowers 123
Wilson, E. H., portrait of 114

THE PLEASURES OF GARDENING.

THE manifold enjoyments which horticulture can confer are not confined to any special season of the year, otherwise in all probability I should have chosen at this period a different theme. Doubtless the most memorable floral inspirations are chiefly experienced during the beautiful seasons of spring, summer, and autumn. In January and February we have the pendulous grace of the Snowdrop, flowering on the grave of winter like a living prophecy of the silently approaching spring. In March and April shine steadfastly upon our vision the golden glory of the Daffodil, with its fragrant companion, Narcissus ornatus, illuminating and transfiguring by their sun-like influence our gardens and lawns. Summer gives us the grandeur of the Oriental Lily and the loveliness of the luminous Rose; while autumn, whose colours are those of the sunset, has radiant Dahlia and Chrysanthemum beauties peculiarly her own. But not only do such exquisite seasons as these inspire the soul of the reverential horticulturist with "a sense of something far more deeply interfused, whose dwelling is the light of setting suns, and the round ocean and the living air, and the blue sky, and in the mind of man;" not only has he experienced, amid the summer twilight, in his own Garden of Eden, such ennobling moral emotions as these, he also must feel, as I did to-day, when he discovers a solitary sweet-scented Violet flowering amid the desolations of winter, that "Nature is but a name for an effect whose cause is God." The most magnificent Rose that adorns and makes odorous the garden in summer, with its glorious environment of deeply-glowing green, does not appeal more profoundly to the consciousness of the lover of Nature than does his first fair vision of the beautiful Anemone-like Christmas Rose. Its contemporary and successor is the equally brave Snowdrop, a flower universally admired and loved; though full of simplicity, its beauty is supreme. Fragrant plants that bring sweetness to the stern heart of winter are sufficiently rare, but there is one to which this unique attribute belongs; I allude to Tussilago fragrans, the Winter Heliotrope, whose odour much resembles that of the precious flower to which it has been instinctively compared. One of the brightest of the floral treasures of winter is Jasminum nudiflorum, the naked-flowering Jasmine, which amid every form of atmospheric adversity flowers with matchless beauty and wonderful luxuriance on our leafless garden walls.

But not only does Nature at this crucial season thus minister in rare and striking instances to our instinct for beauty, she also sustains, through her divine reliability, the inward atmosphere of gracious Faith. When we consign our fairest Roses to the ground we have the conviction that, surviving all the adverse and trying conditions to which by the elements they may be subjected, they will calmly put forth their lustrous leaves in April, form their embryonic buds in May, and subsequently at the touch of the great summer magician, more wonderful than Aladdin in the Oriental tale, glorify this green earth with the revelation of their flowers. No influence is more powerful than that of horticulture for generating the purest pleasures and fairest capabilities of our lives. Since man was driven from his primal, short-lived Paradise, many Edens have been created in every region of the world where cultivation is a possibility, through the combined powers of genius, assiduous perseverance, untiring patience, and intensest toil. We reap to-day that harvest of brightest beauty which our ancestors have sown. The horticultural present, with all its splendid results of culture and hybridisation, has been built upon the achievement of the past. But while the horticulturist is intensely conservative, always seeking the increased beauty rather than the destruction of the venerable types and forms of floral and vegetative life, he is at the same time essentially progressive. He forgets in his great earnestness the difficulties he has surmounted, the heights he has ascended, in the presence of those mountains of thought and aspiration that tower beyond his gaze.

> "**The heights by great men reached and kept**
> **Were not attained by sudden flight;**
> **But they, while their companions slept,**
> **Were toiling upwards through the night.**"

David R. Williamson.

PLANT-COLLECTING IN CHINA.

We learn from Messrs. Jas. Veitch & Sons that their traveller, Mr. E. H. Wilson, is about to return to this country, and in view of his remarkable success and of the importance of his introductions a slight sketch of his work may be read with interest.

The name of E. H. Wilson is now as familiar to all with any knowledge of plants as are those of Douglas, Hartweg, the brothers Lobb, John Gould Veitch, and others of the most successful collectors. He, like those named, had practically a virgin country to explore, and he made the most of the opportunity; but, unlike others, Wilson had great advantages: he had enjoyed a long special training, and the question of expense was not so serious as it was in the middle of the last century. Gifted with quite the right temperament, enthusiastic and resourceful, it is not surprising therefore that Wilson has been so successful.

Born in Birmingham, he received part of his early training in horticulture in the Botanic Gardens of that town under Mr. Latham, the ex-Curator. From Birmingham he went to the Royal Gardens, Kew, as a young gardener, and whilst there he obtained a national scholarship, which enabled him to take a course of lectures on botany at the Royal College of Science, South Kensington, under Professor Farmer. In the spring of the year 1899, Sir William T. Thiselton-Dyer, Director of the Royal Gardens, was asked to recommend to Messrs. Veitch a young man capable of undertaking a prolonged journey in China, and Wilson was suggested as a likely person.

The object in sending a collector to China was to obtain seeds and living plants of species almost certain to prove hardy in Great Britain, and more especially to obtain living specimens of some remarkable species known to exist in the upper part of the Yangtsze valley.

Wilson had been accustomed at Kew to the handling of seeds, and when in April, 1899, he sailed for China *viâ* America, he was given twelve months to learn what he could of the Chinese flora from Professor Sargent, of Boston, U.S.A., and from Dr. Henry, then in the service of the Chinese Customs.

An acknowledgment is due to Sir William Thiselton-Dyer for selecting Wilson, and an equal debt is due to Professor Sargent and Dr. Henry for the knowledge they helped Wilson to acquire.

Wilson arrived at Hong Kong in June, 1899, and after an adventurous trip to Sczemao, in Yunnan, undertaken to meet Dr. Henry—during which time he obtained Jasminum primulinum (see *Gard. Chron.*, March 28, 1903, p. 197)—he returned towards Shanghai to start on the main journey.

Fully equipped, and with definite written instructions, Wilson left for Ichang in February, 1900, a house-boat being his residence for all that summer. In the following April he found Davidia involucrata (see *Gardeners' Chronicle*, April 11, 1903, p. 235), the tree for which he was especially sent. The "Boxer" riots were disturbing, but Wilson displayed considerable courage and did not leave.

During 1901 the high mountain ranges north-west and south of Ichang on the Hupeh-Szechuan boundary were explored, and large quantities of seeds, bulbs, and dried specimens were obtained by Wilson and sent home. Amongst those which up to the present have proved the more striking from a gardening standpoint, are Davidia involucrata, Astilbe Davidii, Clematis montana rubens, Senecio clivorum, S. tanguticus, Buddleia variabilis var. Veitchiana, Actinidia chinensis, Neillia sinensis, Aconitum Wilsoni, Artemisia lactiflora, Pinus Armandi, Spiræa Henryi, Viburnum rhitidophyllum, Brandisia racemosa, Deutzia discolor, Aconitum scaposum var. pyramidalis, Corydalis thalictrifolia, C. Wilsoni, numerous and various Vines, Maples, Spiræas, Rubuses, Magnolias, Limes, Birches, Pyruses, Roses, &c.

MR. E. H. WILSON.

From this journey Wilson returned in April, 1902, spending the summer and autumn at Messrs. Veitch's Coombe Wood nursery, and he started again for the extreme west of China, as far as the Tibetan frontier, in January, 1903, furnished as before with definite written instructions. Once more these instructions were carried out practically without a failure.

In six months, *i.e.* in June, 1903, he reached Kiating in view of the mountains of Tibet, the valley of the Min river, and the sacred mountain Omei.

At Tatien-lu, on the frontier of Tibet, he found the object of his journey, Meconopsis integrifolia (see Supplementary Illustration, *Gardeners' Chronicle*, October 1, 1904), and obtained quantities of seed, the results of which were distributed in September, 1904. Famine prevailed, labour was difficult to obtain, but Wilson evinced a dogged courage which ensured success.

Early in 1904 he again made a journey to Tatien-lu by a different route from Kiating, and in crossing some of the higher passes endured intense cold; his attendants were frost-bitten, and all suffered from snow-blindness.

Wilson describes the scenery of these regions as being of savage grandeur—the country like a sea of mountains, all the higher peaks being under perpetual snow. The Rhododendrons are gorgeous, and for miles and miles present in their season a mass of bloom. He returned to Kiating by the ordinary route, and reached it in safety on July 24, 1904.

In August Wilson again started northwards on an expedition to Sungpan, an undertaking which occupied fifty-two days. Of this trip he states: "Having cleared the low country, I got amongst some magnificent mountain ranges covered with a luxuriant flora, and in places well forested. The sides of these mountains are so steep that a flying-machine would be necessary to properly explore them. Species of Meconopsis occurred in plenty, and when collecting the seed we had to tramp about in snow nearly a foot deep."

In addition to the Meconopsis, a noteworthy find on this journey was a new species of Incarvillea.

The last excursion from Kiating was commenced in November, 1904, and occupied about sixteen days, the plant of which Wilson was primarily in quest being Dipelta floribunda (Caprifoliaceæ), a beautiful flowering shrub which inhabits almost inaccessible places on mountainous cliffs, and very seldom produces fertile seeds. Severe winter weather prevailed at the time, but Wilson accomplished the object of his mission, and returned again to his base at Kiating. This station he finally left on his homeward journey on December 5, reaching Ichang early in 1905, and subsequently left for England, where he is shortly expected.

We congratulate Messrs. Veitch on their enterprise, and on behalf of horticulturists and botanists we tender our cordial acknowledgments to their intrepid and highly successful collector.

THE VALUE OF STEWING PEARS.

For many months to come home-grown fruit will be scarce. Dessert varieties of Pears will be practically past, whilst almost the same may be said of Apples, whether of table or of cooking varieties. As a substitute for these, and to follow on for a considerable period, I know of no fruit more suitable than Pears of stewing varieties. They will keep good for many weeks, and when carefully stewed and served, few fruits can equal them as a sweet. Both in Worcestershire and Sussex I have been fortunate enough to have found some grand old specimen trees (standards) which yielded several bushels of fruit each, and very serviceable the fruit proved throughout the winter and spring months; indeed, these trees were considered as valuable as any in the garden or orchard.

In planting a new garden or orchard, or in renovating old ones, the merits of the stewing Pear are usually overlooked, though others of only second-rate quality, and which are only usable for a very brief period, are planted freely. It may be that many reject them thinking they may have to wait for a considerable time before the trees come into bearing, which is true to a great extent when standard trees are planted in the ordinary grass orchard; but fortunately there are other ways of growing and training them which may come under ordinary garden cultivation, such as bushes and espaliers, also as cordons on an east wall in inclement districts. Indeed, I am not sure that they might not profitably replace many inferior varieties now occupying valuable positions on a west wall or fence.

Unnecessary hedges, which yield no return, are sometimes used as divisions in kitchen gardens, proving in many cases cumberers of valuable ground, a haunt for birds, and receptacles for rubbish. How much better and more profitable would it prove were these grubbed and burnt, the site cultivated, replaced with a double row of strained wire trellis 5 or 6 feet high, and Pear-trees trained thereon, either as oblique cordons or espaliers, including some varieties whose fruits would be suitable for stewing? Several pyramids and open bushes might also be planted, while I would strongly advise landowners to plant a few tall standards in their grass orchards, or even in their pleasure grounds.

Of the different kinds we have under cultivation, Catillac is seen the most frequently in gardens, though the old standards referred to above were of the noted Black Worcester. In Dr. Hogg's *Fruit Manual* the following varieties are named under the heading of "Stewing":—Belmont, Besi d'Hery, Flemish Bon Chrétien, Gilogil, Verulam, Winter Franc Réal, and Uvedale's St. Germain. In some localities where the soil is not quite suited for good Pear culture, I have found such kinds as General Todleben and Beurré de Rance hard and gritty, but they have proved very acceptable for stewing, though unsuitable for dessert. *Richard Parker, January.*

CYMBIDIUM SANDERI.

Our illustration (fig. 49) represents the fine new Cymbidium Sanderi, for which Messrs. Sander & Sons received a First-class Certificate at the meeting of the Orchid Committee of the Royal Horticultural Society, on February 14. It was discovered by Micholitz when exploring for Messrs. Sander in the highlands of Annam in 1904, at which time dried specimens of the flowers were received, and a very few plants came alive. It is a companion plant to the handsome white-and-purple C. Parishii Sanderæ, sent by the same collector, and is one of the finest introductions of recent date, a grand addition to the species, and destined to play a great part in the production of novelties in the hands of the hybridist. The plant has ovate, somewhat compressed pseudobulbs, which are furnished with gracefully-arching, narrow, bright-green leaves. The inflorescence rises erect, and by the evidence of the scars on the old flower-spikes, may have seven or eight flowers. The flowers are white delicately tinted with a faint shade of rose, the bases of the sepals and petals and the labellum being decorated with rose-purple. *J. O. B.*

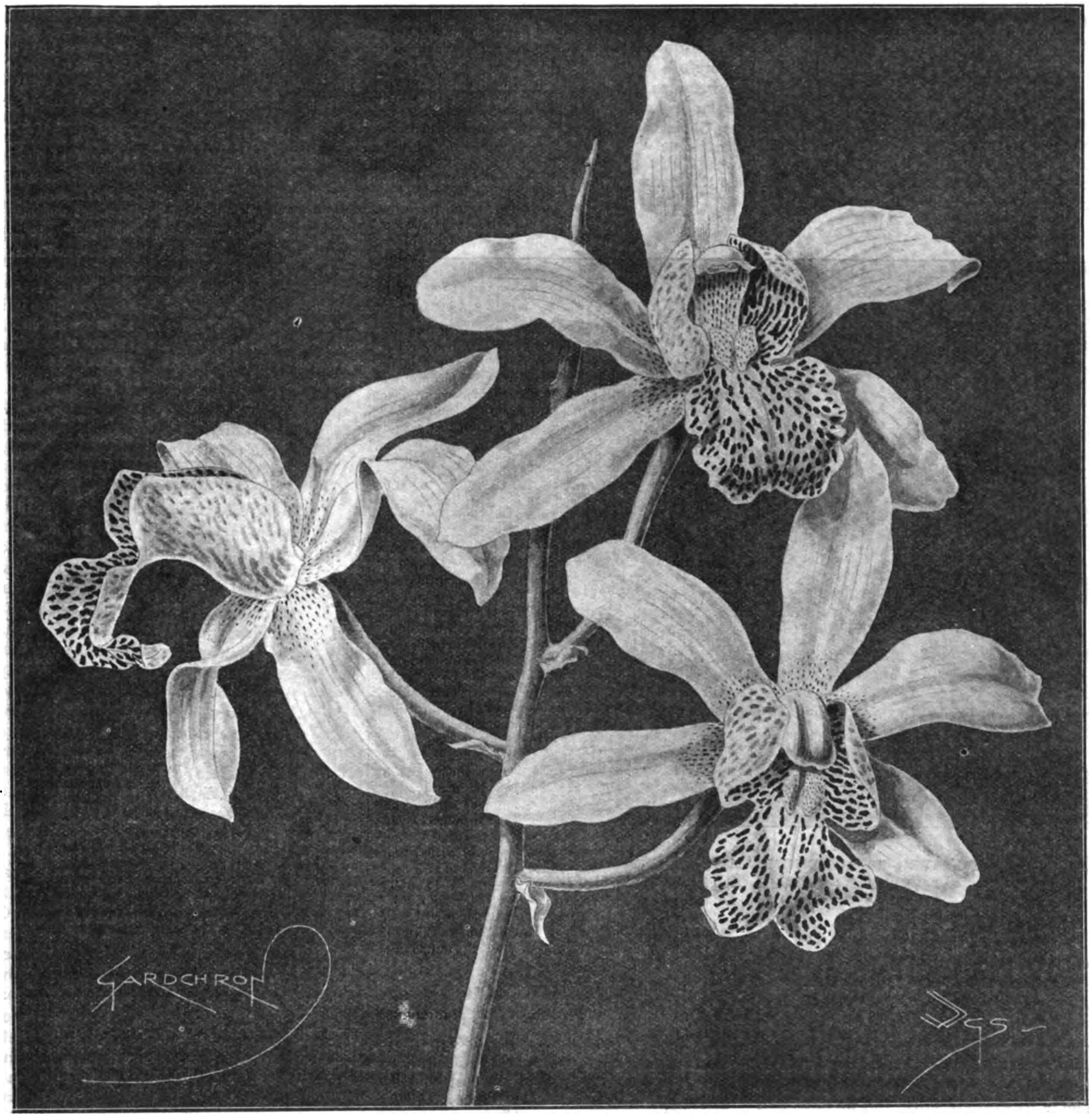


FIG. 49.—CYMBIDIUM SANDERI (HORT. SANDER): FLOWERS WHITE, WITH ROSE AND PURPLE MARKINGS.
A new species. Awarded a First-Class Certificate at the Royal Horticultural Society's Meeting on February 14.

FRUIT REGISTER.

APPLE LADY HENNIKER.

During the month of February, when dessert Apples are scarce, Lady Henniker, although classed as a kitchen variety, is agreeable for dessert. As a standard tree or as a freely-grown bush one can usually make sure of a crop of the variety Lady Henniker when there are Apples of any kind. In some soils the fruits have a tendency to become spotted in the skin, and the spots are sometimes deeper than the skin, which is detrimental in every way, and interferes with their keeping qualities. As a late keeping dessert variety it is worth planting.

APPLE BLENHEIM PIPPIN.

After Cox's Orange Pippin, Blenheim Pippin is the most popular of Apples in the dessert section, and it would be more so but for the fact that too long a time is required to get the trees into bearing. When once this is done, however, it is remarkable how regularly this Apple will afford a crop of fruits. This is some compensation for the delay entailed. I have lately experimented with the variety, with a view of bringing it earlier into bearing, by grafting it on to ten-year-planted standard trees of Ecklinville Seedling, which is apparently an excellent variety for use as a stock. Half-a-dozen stout grafts were put on four years since, each one having three buds. The scions grew away rapidly, making in some cases from 2 to 3 feet length of growth in the first season. Instead of cutting the shoots hard back to form a head, they were allowed to extend almost at will; I simply took out the points of the strongest shoots, and thinned out the shoots to avoid over-crowding. So successful has been this method that a nice crop of good fruit was produced last year, and there is a good prospect for the coming season. As the trees are standards, an opportunity is afforded of allowing a free extension of growth, thus enabling the branches to form fruit-spurs naturally, which is not so easy where the trees are restricted, as in the case of bush-trained or pyramidal examples. *E. M.*

Pear Virginie Baltet.

A fruit in perfection in December, of large size, club-shaped, oblique at the base where it joins the short stalk; skin yellow flushed with red, smooth; flesh melting, juicy, sugary, delicately perfumed. Raised and distributed by M. M. Baltet. *Revue Horticole*, February 16.

PELARGONIUM "MADAME CROUSSE."

The illustration at fig. 50 shows what a rich display of flowers may be obtained from Ivy-leaved Pelargoniums when trained as wall plants. The specimen figured is growing about 10 feet high against the front of the residence of Mr. R. H. Phillips, at Dudley Terrace, Ventnor, who being quite an amateur in horticultural matters is justly proud of the appearance the plant had in August last, when the photograph was taken. It must be pointed out, however, that the climate at Ventnor is so favourable that the plant thrives out-of-doors all the year round, and the roots therefore are not subjected to disturbance in autumn as would be necessary in districts where Pelargoniums have to be removed indoors. Even on Christmas Day last Mr. Phillips's plants bore forty-five "trusses" of flowers, some of which were fully expanded. An admirable testimony to the favourable character of the winter climate at Ventnor.

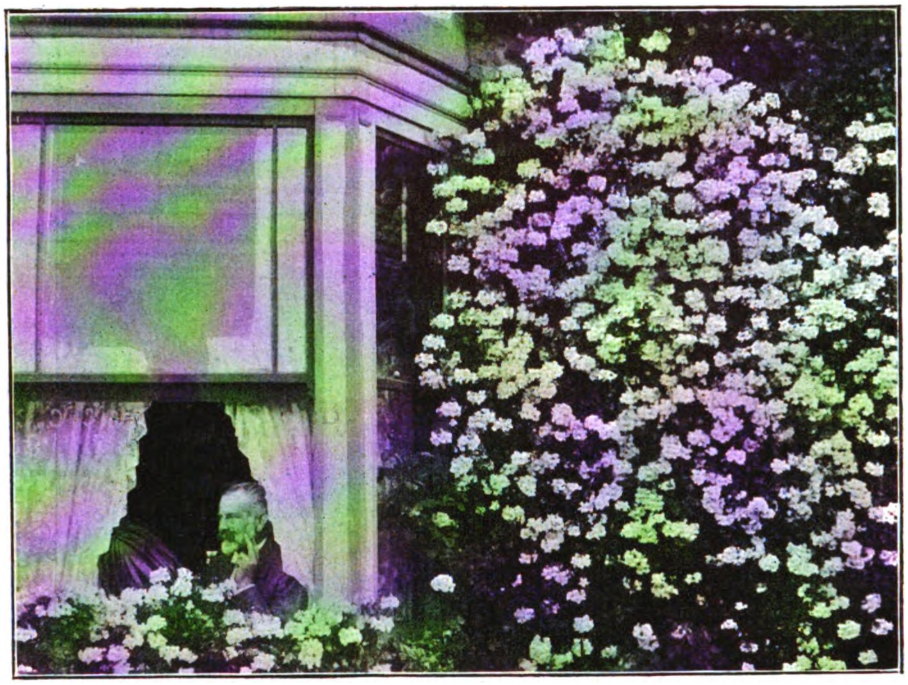


Fig. 50.—Ivy-leaved Pelargonium "Madame Crousse" on a house-front at Ventnor: colour of flowers rose-pink.

Pear Le Lectier.

An excellent late Pear. The form figured is Calebasse-shaped. *Bulletins d'Arboriculture*, February.

Kitchen Apples for Use in February & March.

For present use Striped Beefing is a good variety; the fruits are large in size and rich in colour. The tree grows strongly, and we have had to prune the roots every few years; but it is a variety which we should not like to be without. Another old but excellent keeping Apple is Rymer, one of our best kitchen Apples, and a most reliable cropper. Sandringham we still have in good condition, and this variety also bears well as a standard; as does Alfriston, another grand Apple for use during the next two months. The fruits are very large, and they cook well. Lane's Prince Albert and Newton Wonder are capital here, either as bush or standard trees: the former variety is especially fine as standards, and the trees appear to do well when grafted on healthy orchard stocks, thus showing that the Crab makes an excellent stock for the variety. *James Mayne, Bicton Gardens, Devonshire, February 16.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BURFORD.

Sir Trevor Lawrence's famous gardens, sheltered by Box Hill, are exceptionally well situated for the perfection of the flowers of winter-blooming species, and often there is a fine show of flowers in the Orchid-houses there when there is a scarcity of bloom in collections less favourably situated. This winter, however, the fogs have reached Burford, and many of the showy flowers, and especially those of the Phalænopsis, were destroyed. In the Phalænopsis the display is only deferred, for the more backward buds have since developed.

Contrary to the usual experience in gardens, Phalænopsis amabilis (grandiflora) is one of the best to grow at Burford; one large specimen of it which has been in the gardens many years has eleven leaves and a very strong branched spike, and others of the same species are equally vigorous.

In the same house, with a good collection of rare Cypripediums, stands the strong plant of Cypripedium Stonei platytænium, now really two plants, though still in the same pot. Among the Cypripediums in flower recently was a fine specimen named C. × aureum Confetti, but which resembles a very handsome C. × Leeanum of the Albertianum class; several of the delicately-tinted Burford hybrid C. × hirsuto-Sallieri; a very large form of C. × Lathamianum, and other hybrids.

In the Cattleya and Lælia-houses the hybrids encroach steadily on the space formerly occupied by the species, which are now mainly represented by albinos and proved fine varieties. In this department the introduction of leaves into the compost for potting has proved highly beneficial, and the large number of rare plants of the Lælia, Cattleya and Lælio-Cattleya section never looked so well at Burford as at present. Mr. W. H. White, the Orchid grower at Burford, uses in most cases equal parts of leaves and peat, with a surfacing of sphagnum-moss, and so far he has had no reason to regret the use of leaves in the compost, though, like all cautious Orchid growers, he counsels great care in watering.

The hybrid Brasso-Cattleyas and Lælio-Cattleyas are well furnished with flower-sheaths, in some of which the flowers are showing.

In the intermediate-houses, which contain a very interesting collection of pretty botanical plants, as well as the best of the showy species, a good many species of Maxillaria are in flower, including the rare M. fractiflexa, M. arachnites, M. lepidota, M. pumila, M. leptosepala, &c. The very remarkable M. scurrilis, figured from Burford in the *Gardeners' Chronicle*, July 28, 1900, p. 65, is also thriving well, although refractory when first imported. The varieties of Miltonia vexillaria, M. × Bleuana, and the Brazilian species of Miltonia, are in fine condition, showing well for bloom; a rich purple form of M. × Binoti being in flower; and among other others noted in bloom or bud are Dendrobium Kingianum and its white variety; D. glomeratum with bunches of rose-purple flowers; the pretty white D. æmulum, and D. Fytcheanum with many spikes; the yellow-petalled D. × Melpomene, a companion to the fine yellow D. × Wiganiæ xanthochilum, raised at Burford, the fine white D. Ashworthiæ, and a few other Dendrobes. In the house in which the Sobralias and tall Epidendrums are grown, some of the Sobralias are in flower or bud, so also the brilliant scarlet form of Epidendrum × O'Brienianum, the rose-and-white E. × Ellisianum, E. purum, E. radicans, two varieties of E. polybulbon, and some of the smaller species. Also two good specimens of Spiranthes colorata with ornamental foliage spotted with white and upright spikes of red flowers; Odontoglossum Insleayi, Sophro-Cattleya × Chamberlainiana, one of the prettiest and most free-growing hybrids of Sophronitis grandiflora, with flowers and large seed capsules, Oncidium cheirophorum, &c.

In the warm-houses the principal show of Calanthes was past, and the plants of the later-flowering Regnieri section are in bloom. The Aërides, Angræcums, &c., promise a good supply of bloom, some of specimens being already advanced in spike. One grand specimen of Angræcum modestum Sanderianum, which has been in the collection twenty years, has fourteen large, fleshy leaves and four long spikes, and other rare species are about to bloom, including some very singular species of Angræcum. The new Vanda Watsoniana is in bud, and the unique V. × Marguerite Maron in robust condition.

The cool-houses have the Odontoglossums in fine health. Bright colour is given to the houses by a number of the brilliant scarlet Sophronitis grandiflora, among which is the original Burford specimen grown from a small plant obtained sixteen years ago and now finer than ever and bearing over sixty flowers and some buds. This plant has obtained two silver medals and has been much admired when shown. Others in flower are several good forms of Oncidium varicosum, one having three spikes of bright-yellow flowers, with red-brown blotch on the lip; some pretty pans of Pleione humilis, with many white-and-rose flowers; the bushy evergreen Epidendrum montanum, with many heads of white flowers, and various other pretty species. Seedling Odontoglossums are being raised very satisfactorily. Formerly they were thought to be almost impossible to rear, but now it is known that they are not more difficult than other species if the proper place can be found for them.

The Masdevallia house has the specimens fresh and vigorous, as they always have been at Burford, but there are only a few in bloom yet. The rare M. trinema with beautiful silver-white flowers marked with purple; the very rare M. Burfordiensis with large, fleshy, claret-coloured flowers; the scarlet M. racemosa, and a few others were remarked in bloom, and the rare M. triglochin and M. deorsa, the latter having a singular pendant mode of growth. Of the same class Stelis micrantha, some pretty species of Pleurothallis, Octomeria, &c., are in bloom and bud.

In the remarkable collection of Bulbophyllums and Cirrhopetalums are many sending up flower-spikes, and the singular feather-lipped Bulbophyllum tremulum, the fragrant B. suavissimum, and some others, are already in bloom.

This famous collection contains a larger number of species than any other and these being native of very widely separated regions, it is a matter for congratulation that the collection maintains its reputation for good cultivation, and that some classes, as for example the Lælias and Cattleyas, have improved even on their former good quality.

COLONIAL NOTES.

NEW SOUTH WALES.

Christmas in New South Wales.—A correspondent, writing from Waverley (near Sydney, N.S.W.), sends us an interesting account of the weather recently experienced there. We read that "on Christmas Eve the temperature did not go below 90° until after 10 P.M. On the following Thursday 95°, on the Friday 91°, and on Saturday (New Year's Eve) 114° were registered. I think it was the record for December for forty years—moist, muggy, tiring heat, so that it was impossible to keep cool; all the crockery, furniture, and even one's clothes were hot to touch; but in the country towns, of course, the reading was much higher, and on New Year's Eve in some of the Sydney arcades the temperature rose to 120°. New Year's Day turned out much cooler than the day preceding, and the heat-wave is gradually subsiding. To-day (Thursday, January 5) it is 86°, but rather thundery.

Bush Fires.—The poor country people are having a dreadful time, bush fires raging everywhere; stock, cattle, sheep, crops, and homesteads are being burnt out in scores, and it is sad to think what will happen if the rain does not soon come to put the fires out. In some districts there are as many as 20 to 30 square miles ablaze, and whole families, unable to get shelter from the fires, have sought refuge in every available creek and water-hole. These are infested with all kinds of animals and reptiles trying to escape the fury of the fire. A bush fire of good size once seen is never forgotten. The present outbreak is attributed to broken glass lying about, and the heat of the sun is quite sufficient to cause a light. I remember once, some years ago, in Goganjo (Queensland), seeing from a safe distance a fire raging on some hills. The flames seem to gallop along like some mad living thing, and shoot up the tall Gum-trees with frightful rapidity, and rush along the ground very often faster than a horse can gallop. In this present outbreak it is feared that there is much loss of life, and on all sides the tales of suffering from the country are heartrending. Five buildings and the Episcopal church at Bundanoon were reduced to ashes in a day; and one hears of similar catastrophes in every direction. One afternoon quite a panic broke out, and when the tram came in it was fairly rushed, the women carrying wet blankets and towels round their heads. The heat is something terrific, and smoke and cinders are flying everywhere; even the mail train had to return yesterday, and wait for a couple of hours before starting. A relief fund has been started in all the States for the aid of the sufferers."

PROLIFEROUS CYCLAMEN.

MR. DENNY, of Down House Gardens, Blandford, sends us a Cyclamen which differs in some respects from any that we have seen (see fig. 51). Florists would call it a semi-double variety; but it is something more than this, inasmuch as from the axils of the five normal sepals, between them and the five or six normal petals, emerge five or six separate florets, each consisting of from two to five separate petals without any calyx, but with one or two stamens. Within these adventitious florets was the usual corolla, tubular at the base, and with the stamens as usual opposite the petals. The case is therefore included under the head of axillary floral prolification. It is interesting to add that while the normal flower remained on our table for a week or more in a fresh condition, the five adventitious flowers withered quickly, and eventually formed a frill or ring of brown withered petals outside the still unfaded corolla.

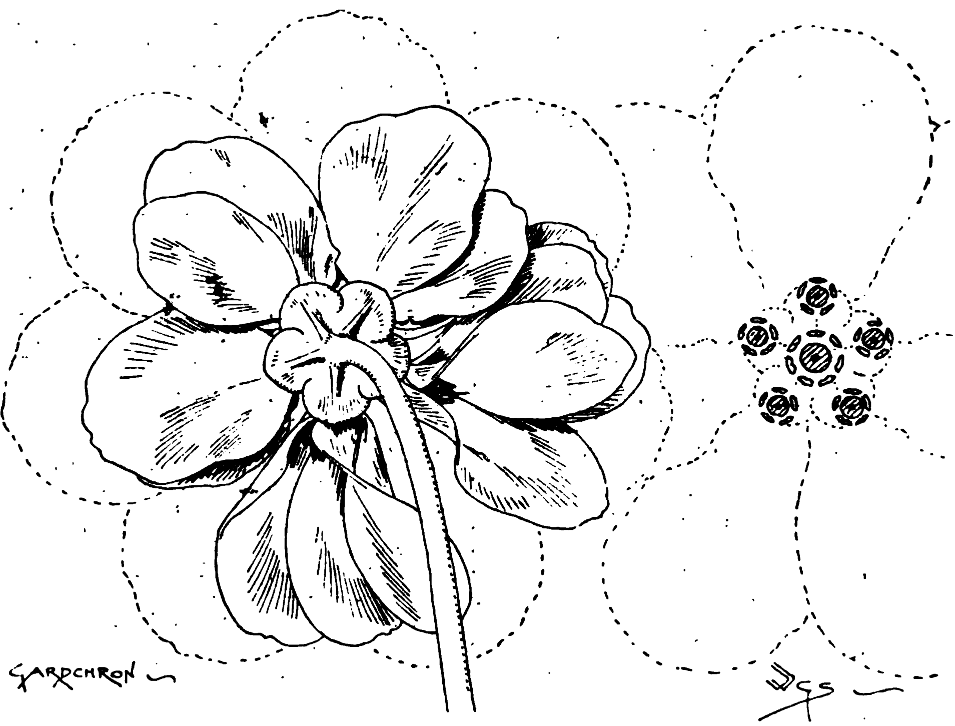


FIG. 51.—CYCLAMEN FLOWER FROM THE BACK.

Showing the position of the adventitious flowers in the axils of the sepals between them and the normal petals which are shown in dotted outline. The plan shows the relative position of florets.

THE ROSARY.

GRAND DUCHESS (GROSSHERZOGIN) ALEXANDRA, H.T.

FLOWERS pale, primrose-yellow. *Garten Welt*, February 11, 1905, p. 234; coloured plate.

BOOK NOTICE.

VEGETABLES AND THEIR CULTURE. By T. W. Sanders.

ANOTHER book on vegetables has been published, and the author claims a place among the many, stating that others all fall short of necessary information. We do not go so far as this, but we do say that Mr. Sanders has in 163 pages touched upon most subjects that are worth the attention of vegetable growers. In the formation of the vegetable-garden the initial expense may deter those with villa gardens from adopting the advice given in the book, though it is excellent in its way. The plans are very helpful; but how often it happens that after the builder retires the garden that is to be is a mass of brickbats. One cannot adopt the advice given when only a quarter of an acre, or even less, is the space at command. Again, is it well to cut up the ground into so many paths or borders, and thus lose space?

Manures are dealt with largely; but we would advise beginners to depend more upon animal manures till they know how to use the chemical fertilisers so much advised. In a new garden the soil should be thoroughly tested before these are much employed. The author, as one would expect, owing to his previous experience as a gardener, wisely touches upon the value of salt; but it must also be remembered that few things are more injurious than salt employed at the wrong season; and this applies with equal force to numbers of other substances.

The cropping of the garden, which is an important item, is briefly touched upon. We would add that resting or purifying the soil is equally important, by clearing away the crops early and trenching or turning up the soil roughly.

The system of planting recommended entails a great deal of trouble, for each plant is covered over with an inverted flower-pot! It would be far better to draw drills and plant the seedlings in a smaller state. This point is overlooked by many. It saves much labour, there is no need to prick out the plants as advised, and a little filling up here and there is all that is needed. By having drills also the moisture afforded the plants more readily reaches the roots.

The author touches upon seed-saving, but with respect to the Brassica family in a small garden this work is best left alone, as the plants degenerate so quickly.

The exhibition of vegetables is touched upon, but it is far better to get the best produce for home supplies than to centre one's attention upon a few things at the start. In the book is given the number of points allowed for each vegetable staged. Too much importance is given mere size, as some vegetables are almost worthless when grown too large.

Cultural notes follow, and these are mostly to the point. As regards Asparagus we do not agree with Mr. Sanders when he advises mulching new beds with short grass mown from the lawn. In planting we prefer a wide flat drill to ridges, spreading the roots out. It is advised that roots after forcing should be grown on for future use. This is loss of time; indeed in many gardens the roots in beds are left till they are so poor that they do not pay for the land occupied; better make new beds oftener.

There is no great gain in the southern part of the country in sowing Brussel-Sprouts in heat. By so doing large open sprouts result, and they are more attacked by caterpillars. Celery, for instance, is much better sown thinly, and for late supplies planted direct into the trenches. How often one sees large plants, upon which much time has been spent, collapse after planting, or they grow hollow and almost useless.

In regard to root-crops excellent advice is given upon "size" and cropping; but as regards Artichokes, it is stated that they may remain for years in the same position; we would, however, add, that much smoother roots, round, and of better quality, are obtained by good culture, treating them much the same as other roots. Parsnips are often sown much too early. The date here given, January or February, for home supplies would be better two months later, as a Parsnip large enough for any purpose can be grown in six months; for exhibition purposes, roots a yard long and very large are fashionable, but these lack the quality of smaller roots developed more quickly; and such roots do not keep so well.

Potatos are a leading feature. We regret to see some of the best kinds are omitted. Newer ones that have been much praised, although in only a few cases their merits have been tested, are now numerous. In giving a list of vegetables many good things are omitted; for instance, there are only four Cauliflowers enumerated, and this in a list of popular vegetables. Again, with early Turnips, the Long White, so much forced and grown for the Paris markets, is not named. The list, we admit, is a difficult part of the work, but it might well have been more general.

"BEEHIVES AND BEE-KEEPERS' APPLIANCES." Edited by Paul N. Hasluck. (Cassell & Co., Ltd., London, Paris, New York, and Melbourne).

Mr. Hasluck, the editor of *Work*, has collected information scattered over more than 20,000 columns of the above-named periodical, and now offers them in well-arranged and convenient form. Modern bee-keeping depends so much upon hives and appliances, upon the assistance of man rather than on the unaided work of the bees, that a handbook such as that before us is of great use. It contains mention of the newest improvements, and an abundance of illustrations dealing, as indicated by the title, with these rather than with the life and work of bees or with how to move and manage them.

The Week's Work.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Shading will be requisite for many of the more tender-leaved subjects, and if the permanent shading is not yet fixed for the season, sheets of tissue-paper should be spread over such plants as need protection from bright sunlight. Plants near the glass and exposed to the sun will naturally become dry on their surfaces; this should be guarded against, but excessive watering must also be carefully avoided, for seldom are two days alike. The permanent shading appliances should be prepared and fixed ready for use by the end of this month, and then only used when it is absolutely imperative to use them. Although many subjects are now showing signs of renewed activity, do not urge them forward by excessive heat and moisture, but rather maintain such conditions that the growth may be steady and solid.

Miltonia spectabilis and other species of Miltonia having creeping rhizomes should now be in a fit condition to be repotted or resurfaced, but they should be allowed to become moderately dry at the roots before disturbing them. Use pans filled with drainage material to within 2 inches of the rim, and fix the plants in position to form the specimen by using good fibrous peat and clean sphagnum-moss in equal parts, making this of slightly mounded shape. Pieces of rhizome having but few roots should be secured in position by means of short bent lengths of copper-wire, placing the growing points centrewards whenever possible. In top-dressing pick out as much of the old material as possible without disturbing the plants, and substitute fresh peat and sphagnum-moss. When the work has been done afford the plants a good watering, and place them on the stage in a shady part of a Cattleya or warm intermediate-house. Spray them overhead regularly, and afford water freely to the roots throughout the growing season. Miltonias of the Clowesii and Regnelli group being stronger-growing and deeper-rooting subjects, may be grown in pots containing drainage material to half their depth. Add a small proportion of Oak-leaves to the peat and sphagnum-moss, and surface with sphagnum-moss alone. These species need a less degree of heat, will bear more light, and having a greater depth of rooting medium, should not be watered so copiously as the others.

M. vexillaria, being now in a state of active development, must not be permitted to suffer from lack of moisture at the base, though where any leaf-mould is used and Fern-rhizomes are substituted for drainage, care must also be taken to avoid over-saturation. Spray the plants overhead once a week with some safe insecticide to keep them free from thrips. M. Roezlii should be afforded a warm, shaded position in the East Indian-house, and if the spot favours rapid evaporation, frequent overhead waterings will be necessary. Potting or top-dressing should be done when new growths appear. Use pans in preference to pots, so that width rather than depth be secured. Place an inch deep or so of Fern-rhizome at the bottom, fill in to near the rim with a compost consisting of one-third each of peat, sphagnum-moss, and Oak-leaves, and a sprinkling of fine sand, surfacing the whole with chopped sphagnum-moss. Afford water but sparingly for a considerable time afterwards, but keep the surroundings moist by daily spraying the plants and by damping between the receptacles. The hybrid between the above two species, M. Bleuana, thrives in a shaded part of the Cattleya-house, and flowers at various seasons of the year. After the plants have flowered, afford them a short rest by keeping them moderately dry. In other respects treat the plants in a similar manner as for M. vexillaria.

Cattleya Gaskelliana is now breaking into growth, and the necessary re-surfacing or potting should be done ere this get too forward. It likes a cooler position than most Cattleyas, hence the materials do not dry up very readily, and so if any leaves be employed infrequent waterings must follow, unless it be when the plants are rooting freely. Like C. labiata, this species should be shaded from all direct sunshine, or the leaves will acquire an unhealthy appearance; but if the shading be too dense it will detract from the quality of the flowers, or even prevent their production.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Stove Plants.—Proceed with the repotting of any plants that require more root-room. Unless the potting shed is conveniently situated a temporary bench placed on the stage in the house containing the plants to be potted should be used. The necessary material for the work should be ready to hand, including clean pots of various sizes, well drained with broken crocks or charcoal. Avoid over-potting. Those plants that do not require a shift into larger pots should have their surface-soil removed and be afforded a top-dressing. Most stove plants succeed in a compost consisting of good turfy loam, leaf-soil, silver-sand, and broken charcoal, but exception should be made for such plants as Ixoras, Marantas, Dipladenias, &c. These require a liberal addition of peat soil to the compost mentioned. A little "plant-manure" added to the compost is very beneficial, but great care should be taken not to employ too much. A 6-inch potful of manure to a barrow-load of the compost is a good and safe proportion. Freshly potted plants will require careful watering for some time afterwards, but in the first instance they should be thoroughly watered with a rose water-pot to settle the soil. Creepers overhead planted in inside borders should be afforded a top dressing of good soil, but first the old soil should be removed and the roots examined. If they are in a healthy condition, a little dusting with bone-meal before the fresh soil is added will be of benefit to them, but should the roots be in a poor condition manure of any sort must be avoided and a little fresh soil only added until such time as the plants recover their vitality and are capable of making roots freely.

Ferns.—In order to obtain a supply of greenery for decorative purposes there is no better method of production than that of having plants growing on the wall of a house having a north aspect. Very little trouble is required in fixing a trellis or wire netting to hold the soil together, and if Ferns be planted now they will make considerable progress during their first season of growth. The appearance of a wall so treated always gives pleasure, and the growth of the plants is much finer than that of plants in pots. Ferns that require a warm, moist atmosphere should be re-potted or top-dressed as may be needed. Equal parts of good turfy peat and loam, a little dried sheep droppings passed through a half-inch mesh sieve, together with broken charcoal and silver-sand in moderate proportions, will form a suitable compost.

Bouvardias, Fuchsias, Abutilons, Aloysias, &c., should now be pruned, placed in a warm-house, and syringed freely on warm, sunny days. A batch of Cannas may be introduced into heat for flowering early; if plunged in a bed of leaves they will soon start into growth, when potting-on or dividing, as may seem best, can be carried out.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Asparagus.—Few vegetables require less labour, are more appreciated, or can be more easily grown than Asparagus. In order to produce long bleached stalks, a considerable depth of soil is an advantage, but stalks about 6 inches in length and of proportionate thickness, one-half of which is fleshy and eatable, may be considered an ideal dish. Such can be produced in soil of very indifferent quality if it be worked well and manured to a depth of from 18 inches to 2 feet. The seeds should be sown thinly in drills 2 inches deep, and from 18 to 24 inches apart, in March, when the soil is in good working condition. Thin out the young plants when large enough to handle, leaving them 15 or 18 inches apart in the rows. Permanent plantations, whether in beds or on the level ground, that were dressed in the autumn with farmyard manure, should now be lightly and carefully forked over, reducing the manure and soil to a fine condition, and removing any substance which would be likely to prevent the shoots from coming freely through the soil. Afford a dressing of nitrate of soda, applying about 2 lb. of soda over 50 square yards, or apply soot in much larger quantities. If the beds are very rich from annual applications of manure, apply a good dressing of air-slacked lime to them. Maintain the supply of forced Asparagus by forcing the plants in warm frames in which the Asparagus will be near to the glass.

Peas sown, as advised early in the year, in 4-inch pots have just been potted into 8-inch pots, placing them sufficiently low to allow of the stems being well moulded-up before leaving the soil 1 inch below the rim. Neat bushy twigs were afforded to support the plants, and they are now in a position near to the glass in an atmospheric temperature of 45° to 50°, having a circulation of fresh air. Where suitable accommodation can be provided, boxes will be found to answer admirably for growing early Peas under glass.

Onions.—Seeds sown as advised early in the year under glass in a temperature of 55° to 60° have just been removed to portable frames on mild hot-beds, the pots being plunged in fine soil near to the glass. Close attention should be given to thinning that no deformed plants (which are visible early) be overlooked, for these would cause disappointment later on by the splitting of the bulbs.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Peaches and Nectarines.—It is well to defer the final pruning and tying of these as long as circumstances will permit; but although the branches have been released from the wires to defer the blooming period, the development of the buds has been so hastened by the warm weather that the work will have to be commenced forthwith. Failure in the cultivation of Peach and Nectarine trees out-of-doors is frequently due to the trees being overcrowded by old and useless wood. Growers are sometimes advised not to prune too much, and the process of disbudding being but little understood, the trees are soon allowed to reach the top of the walls, and the lower parts become quite bare. At this season, nevertheless, very little remains to be done, if all superfluous and old fruit-bearing shoots were removed last year after the fruits were gathered. Remove the ties and shreds, and if the trees were attacked with red-spider or have brown-scale upon them, thoroughly scrub the old wood with a solution of Gishurst Compound, working it well into the crevices of the bark. The brush should be drawn in an upward direction when dressing the shoots, and unless the work be done very carefully, the buds may afterwards drop. White walls should be limewashed, and brick or stone walls be syringed with a solution of paraffin and soft-soap. If 2 oz. of soft-soap be mixed with the same quantity of flowers-of-sulphur and put into 1 gallon of water, it will make an excellent wash for trees and walls also. I use this when the trees have set their fruits, the sun-heat at that time and during the summer radiates from the wall, and carries with it fumes from the sulphur. When all has been made perfectly sweet, lay-in the main branches of the trees, securing them with soft tar-twine to the wires or nails, radiating them from the main stem at equal angles on each side the tree, afterwards filling up the intervening spaces with well-ripened fruit-bearing shoots of medium strength, allowing a space of 4 to 6 inches between each shoot. Well-ripened shoots, where space permits, should be tied-in their full length, but weak and immature shoots may be cut back to a triple or growth-bud in the firm wood. Aim to have an evenly-balanced tree; let the shoots be clean, straight, and as equidistant as possible; shorten the lower branches more than the top ones, so as to secure more vigour in this the weakest part of the tree. New wires should be given two coats of linseed oil. In making the ties, allow the branches ample space to swell. Trees growing on light or gravelly soils should be examined, and if the roots are in the least degree dry, afford them a soaking with manure-water from the farmyard.

Stocks intended for grafting should be cut down to 18 inches of the ground, and old standard trees should be headed back. See that sufficient grafts (scions) are laid in for this purpose, covering them 8 to 12 inches in the ground.

Affix labels to all newly-planted trees, and to any others requiring new ones.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Tomatos.—The earliest plants are now making rapid progress, and require much care in the application of water to the roots until the first trusses of fruit have set, after which more liberal treatment may be afforded them. Pollinate the flowers, and pinch out the side-growths from the main shoot as they appear. Keep the atmosphere moderately dry where plants are fruiting, and a temperature of 55° to 60° at night, with free ventilation during favourable weather. Repot young plants for succession, always keeping plenty of plants in readiness for putting into permanent positions when they are required.

Melons.—If seeds have been sown as advised in a previous Calendar, and are growing in 12-inch pots, let fresh leaves be placed round the pots, if this be necessary to maintain the bottom-heat at 80° or 85°. Spray the plants with water twice on bright days, and keep the atmosphere moderately moist, applying a little ventilation early in the day in mild weather. The plants may be expected to grow more freely as the days become longer, and the house may be closed early on bright days, allowing the temperature to increase to 85°, afterwards falling to 70° at 10 P.M., or 5° lower in the morning in cold weather. Remove all surplus laterals as they appear, and stop the shoots when they have acquired sufficient length or are about 1 foot from the top of the house. Give careful attention to the pollination of the flowers to obtain as even a "set" as possible, two fruits being quite enough for the earliest plants to mature. More seeds should now be sown in 3-inch pots, and the pots plunged as advised in a previous Calendar. These will provide plants for planting in beds. Make preparations for these by thoroughly cleansing the house, and prepare the bed as previously recommended for Cucumbers. Place large turves of moderately strong loam, putting the grass side downwards, upon the bed to form a ridge, and fill up the centre with broken turf and a good sprinkling of wood-ashes. The plants may be put from the seed-pots into the bed as soon as they are large enough, planting them (not too deeply) at distances of 1 or 2 feet apart. It is essential that such plants never suffer a check from being pot-bound. Hero of Lockinge and Blenheim Orange are excellent varieties, but a few new varieties of repute may be planted also. British Queen is a white-fleshed Melon of medium size and excellent quality.

Strawberries.—As soon as the fruits change colour remove the plants to a cooler atmosphere, afford them more ventilation, and discontinue the use of liquid manures. When the fruit has been taken from the earliest plants, remove them to a cold frame to harden off before planting them out in the garden, where they will fruit again during September. Plants which are now swelling their fruits may have at night a temperature of 60° to 65°. Liquid-manure from the farmyard, also weak guano water and clear soot water, are useful at this stage. During the same period the plants are liable to attacks from red-spider, therefore syringe them well underneath and above the foliage, and do not allow them to suffer for want of water at the roots. Strawberry plants in flower should be afforded an atmospheric temperature of 55° and free ventilation. Pass the brush over the flowers at noon each day, and when they have "set," thin out the fruits to eight upon each plant. Introduce later plants to a house and place them near to the glass where the temperature will not exceed 50° at night. The present is a good time for those who have not the convenience for very early forcing, to introduce the first batch of plants, as they will soon commence to grow freely.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Herbaceous Border.—The following list of half-hardy annuals, &c., are all useful for adding variety to the herbaceous border. They should all be sown in the spring, the seedlings pricked off when ready, and be planted in the border in June:—Alonsoas, Arctotis grandis, Aster sinensis, Antirrhinums, Chamæpeuce, Diascia Barberæ, Dianthus, Francoa ramosa, Gaillardias, Gaura Lindheimeri, Hollyhocks, Hunnemannia fumariæfolia, Melianthus major, Nicotiana affinis, N. Sanderæ, N. sylvestris, Nemesia strumosa, Pentstemons, Phlox Drummondi, Salpiglossis, Scabious, Œnothera taraxacifolia, Polygonum orientale, and Zinnias. Lobelias comprise some of the finest of plants for beds, borders, and bog-gardens, and delight in a deep rich soil. Seed should be sown early in order to secure plants for planting in June. They may also be sown in July for flowering the next season.

Pentstemon Newbury Gem is a plant suitable for many positions in the flower garden. It is of dwarf habit and freely produces its scarlet-crimson coloured flowers. The stock can be increased from cuttings obtained by placing the old plants into heat, which can be performed now. The growths when removed root readily, and if potted-on develop into good plants for the borders.

Early-Flowering Chrysanthemums and Fuchsia Dunrobin Bedder can be similarly propagated.

Pelargoniums. — Prepare a mixture of sandy loam and leaf-mould for potting Pelargoniums that were rooted in boxes last autumn. Afford variegated and choice sorts the best positions in an atmospheric temperature of 60° to 65°. If desired, cuttings may now be inserted in small pots containing sandy soil, afterwards placing the cuttings on a gentle bottom-heat till rooted.

Repotting.—Plants of Humea elegans from seed sown last July and wintered in 4-inch pots should now be given a shift. Solanum jasminoides is a useful climber for flowering in summer, and if cuttings were rooted last autumn the plants should now be potted on.

Sub-tropical Plants.—Seeds of Ricinus may now be sown, putting one seed in each 3-inch pot. Place them in a temperature of 65° to 70°, and when the plants are ready move them into 5 or 6-inch pots. Encourage them to make good growth, then harden them off. Other sub-tropical plants, such as Melianthus major, Solanum Balbisii, S. Warscewiczii may be sown; also seeds of Antirrhinums and Pentstemons. See that the seedlings do not get "drawn," eaten by pests, or become dry or too wet. When watering, use sufficient water to wet the soil thoroughly, and let it be of the same temperature as that of the house.

The Propagation of Tender Bedding Plants can be commenced when they have made growths large enough to furnish cuttings.

THE APIARY.

By CHLORIS.

Feeding in March.—The critical season of the year is now almost with us, for it is from now until the middle of May that stocks die from starvation. Especially will this be the case this year in many parts of the country, for two reasons—(1) the honey harvest was almost a complete failure in some counties; (2) January and February have been very mild indeed, and early breeding has followed in consequence. About the end of the first week in March, when the weather is favourable, make an examination of the hives, ascertain their exact condition, taking note of the following points—(*a*) Has breeding commenced? (*b*) how much food is there stored and sealed? (*c*) and is the hive watertight? If breeding has started we know the stocks are headed by a fruitful queen; if there be no brood the sooner a queen is introduced, or the bees united to a weak stock headed by a queen, the better. Should stores be low syrup feeding should be commenced.

APPOINTMENTS.

TUESDAY,	Feb. 28	Royal Horticultural Society's Committees Meet. National Rose Society's Committee Meeting.
		MARCH.
THURSDAY,	Mar. 2	—Linnean Society's Meeting.
SATURDAY,	Mar. 4	Société Française d'Horticulture de Londres Meeting.
MONDAY.	Mar. 13	United Horticultural Benefit and Provident Society, Annual Meeting at Caledonian Hotel, London, 8 P.M. Birmingham Mutual Improvement Society's Meeting.
TUESDAY,	Mar. 14	Royal Horticultural Society's Committees Meet. National Rose Society's Committee Meeting.
THURSDAY,	Mar. 16	—Linnean Society's Meeting.
WEDNESDAY,	Mar. 22	Royal Botanical Society's Show at Regent's Park.
FRIDAY,	Mar. 24	—Royal Botanical Society's Meet.
MONDAY,	Mar. 27	Birmingham Mutual Improvement Society's Meeting.
TUESDAY,	Mar. 28	Royal Horticultural Society's Committees Meet.
WEDNESDAY,	Mar. 29	Liverpool Horticultural Society's Spring Show (2 days).
THURSDAY,	Mar. 30	Royal Horticultural Society's Exhibition of Colonial Fruits and Vegetables (2 days). Torquay Flower Show.

SALES FOR THE WEEK.

MONDAY NEXT—
Roses, Azaleas, Herbaceous and other Plants, Lilies, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY, NEXT—
Palms, Plants, Azaleas, Roses, Fruit Trees, Perennials, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Roses, Lilies, Azaleas, &c., at Stevens' Rooms.

FRIDAY NEXT—
Border Plants, Roses, Perennials, &c., at 12, by Protheroe & Morris, at 67 and 68, Cheapside, E.C. —Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30 o'clock.

(For further particulars see our Advertisement columns.)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —40·5°.

Actual Temperatures:—

London.—*Wednesday, February* 22 (6 P.M.): **Max.** 43°; **Min.** 35°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, Feb.* 23 (10 A.M.): Bar., 30·1; Temp., 39°. Weather—dull and overcast.

Provinces.—*Wednesday, Feb.* 22 (6 P.M.): **Max.** 38°, Plymouth; Min. 37°, N. of Ireland.

Cultural Science. There is, or rather we should say, there was, a great need in this country of a journal wherein experts might speak to experts of their experiments and their speculations, discuss methods and results, until they are ripe enough to be laid before the general public. The *Journal of Agricultural Science*, of which the first part is now before us, is intended to supply that need. Papers of the description contemplated by the editors are as good as lost when published in the Transactions of learned societies, where they are necessarily overlain with the profusion of other matters; and they are not of a nature to be inserted at length in current periodicals of a less technical character, which must deal with established results rather than with lengthy discussions. The first paper in the copy before us deals with the much debated question of Mendelism. Evidence is gradually accumulating in support of this theory, but the subject is so complex and may be looked at from so many points of view, that records of detailed experiments are at the present stage specially valuable. Mr. Biffen, of the Agricultural Department of the University of Cambridge, leads off with the results of some experiments started with the object of obtaining some improvement in the quality of English-grown Wheat. Whilst in this country we grow an average of some 30 bushels to the acre, more than double the quantity grown on the same area in most other countries, yet the quality or "strength" of our Wheat as required by the miller and the baker is markedly inferior to that grown in Canada, Russia, and the United States. To remedy this state of things various experiments have been made in hybridising or cross-breeding, and these experiments till recently have been "a game of chance played between men and plants." Mendel's experiments go to show how definite results may be expected in future rather than haphazard chances. We need not here repeat the results of Mendel's experiments with Peas, as brought to light by Mr. Bateson; but, in order to show the practical value of such trials, Mr. Biffen says:

> "If Wheats behaved in the same manner as Mendel's Peas, then the fixing of the chosen forms after the breaking of the type was going to be a simple matter, requiring merely the test of a single season, and not years of selection and inbreeding. If this were really the case, we had prospects of, so to speak, picking out the valuable characters from different varieties and building up an ideal type. There were possibilities ahead the breeder had hardly dared to hope for. Fresh experiments on the same lines as those of Mendel were accordingly planned, with the object of obtaining definite knowledge as to the behaviour of all the possible characters of Wheat on hybridising."

We cannot here repeat the details as to the contrasting characters presented by the crossed Wheat plants, as shown in the very numerous trial plots supervised by Mr. Biffen. It must suffice to say that the results are in entire conformity with the results expected from a consideration of Mendel's Laws, according to which in the second generation of the cross-breds the "characters" presented are some "dominant," others "recessive," and that the proportion of one to the other is always three dominant to one recessive, or a very close approximation to that ratio—a ratio expressed by the formula 3 D : 1 R. There are exceptional cases, into the details of which we cannot enter. We conclude our reference with this important citation:—

> "Any desired combination of the characters represented in any two varieties can be obtained 'fixed' in the first or at the most the second generation from the hybrids."

Mr. Albert Howard follows with an article on the influence of pollination on the development of the Hop. It is found that Hop-flowers which escape pollination from male plants, of which a few are found in most Hop gardens, are retarded in their development, and never make up the deficiency. They turned out at picking-time to be small, green, and unripe, and compared very unfavourably with the well-grown golden-yellow and ripe pollinated Hops. This is in accord with what was, we believe, stated in these columns sixty or more years ago, and which was also noticed in Royle's *Materia Medica*, published about the same time.

Mr. Hall has an important paper on the indications afforded by the plant itself of the nature and proportions of the ingredients in the soil. To obtain results of value we require to know the average amount of certain constituents in a given plant, as well as in certain parts of that plant, on a given soil over a series of years, comprising extreme variations of seasonal climate, so that the problem is not so simple as it looks. One point, though of course previously known, comes out strongly; that is, in Mr. Hall's words, "the fluctuations in the composition of the ash are reduced to a minimum in the case of organs of plants which, like the grain of cereals or the tubers of Potatos, are manufactured by the plant from material previously assimilated."

There are various other important contributions by Dr. Bernard Dyer, Mr. S. H. Collins, Prof. Middleton, and others; but we have only space to allude to one other short note of Mr. Hall's on a subject about which some of our correspondents have lately been enquiring; we allude to the use of calcium cyanamide and of calcium carbide as soil-fertilisers. Calcium cyanamide, says Mr. Hall, represents the first attempt on a commercial scale to avail ourselves of the nitrogen in the air as an artificially obtained manure. Calcium cyanamide is obtained by passing a current of nitrogen gas over calcium carbide at a high temperature. The result is a compound containing 20 per cent. of nitrogen. The trials made at Rothamsted with this substance in comparison with sulphate of ammonia, show that the cyanamide is an effective nitrogenous manure, but whether it is commercially more valuable remains to be seen. Whether the calcium carbide (a mixture of calcium and carbon) is of any value as a source of lime is not stated.

We have said enough to show that the *Journal of Agricultural Science* deals with subjects of as great importance to the gardener as to the farmer, and in the full assurance that progressive culture, whether in the garden or in the field, will depend on the application of scientific data to cultural practice, we heartily welcome the new publication.

Royal Horticultural Society. — The next meeting of the Committees of this Society will be held on Tuesday next, February 28, when a lecture will be delivered by the Hon. J. H. Turner, the Agent-General for British Columbia, on Fruit-growing in that province, which will be illustrated by lantern-slides.

Linnean Society.—An evening meeting will be held on Thursday, March 2, at 8 P.M., when the following papers will be read:—1, Zoological Nomenclature: International Rules and others (to be followed by a discussion), by Rev. T. R. R. Stebbing, M.A., F.R.S., Sec.L S. 2, Biscayan Plankton, Part IV., The Thaliaceæ. By Dr. G. Herbert Fowler, M.A., F.L.S., &c.

Arboretum.—The number of the *Mitteilungen der Deutschen Dendrologischen Gesellschaft* for 1904, published at Bonn under the superintendence of M. L. Beissner, is full of interest to those lovers of trees to whom the German language offers no difficulties. Its contents are very varied, and refer particularly to the newer and most interesting introductions from Arizona, British Colombia, and elsewhere. There are also monographs of Ligustrum, Philadelphus, and Deutzia, the value of which would be greatly enhanced if the differential characters at least were given in Latin as well as in German. A full index is supplied, for which readers will be very grateful.

FLOWERS IN SEASON. — A box containing flowers of a number of named varieties of the florist's Primula has been submitted to us by Messrs. WILLIAM BULL & SONS, King's Road, Chelsea, S.W. There are good shades of colour among the varieties included, some of the flowers almost approaching a blue colour, notably one of a deep lavender shade which has received the name "Blue." There are also some of a semi-double type. Judging from the examples before us the strain is a desirable one.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture hall of the Institution on Monday, February 27, when a paper will be read by Mr. HAROLD GRIFFIN (Fellow), entitled "Some Proposals for Improving the Law and Practice of Rating Property."

THE TOMATO TRADE. — Some interesting figures have reached us from the other side of the Atlantic which may be thus compressed: The Tomatos packed in Canada last year amounted to 297,750 cases, each of which contained two dozen tins, compared with 397,500 cases in the preceding year. Growers in the United States packed some 8,671,053 cases last year as compared with 10,282,309 in 1903.

SCAPHYGLOTTIS COGNIAUXIANA.—M. COGNIAUX informs us that the native country of Scaphyglottis Cogniauxiana, described in our columns by M. De WILDEMAN at p. 33 of our present volume, is not Brazil, as there stated, but Mexico. It was collected near Orizaba by Dr. PURPUS, who sent living plants to M. DE LAET, of Contich, and to M. SCHENCK, of Darmstadt.

POPULAR NAMES.—A well-known amateur horticulturist writes:—"How glad I am you have called attention to the absurd re-naming of Correas and Lachenalias! The proposed names are highly objectionable, and specially so to simple and ignorant people who are 'fond of flowers.' They help to confuse the very slight botanical knowledge they might possibly otherwise imbibe."

"COUNTRY LIFE IN AMERICA" is a magazine evidently suggested by our own periodical of a similar name. Paper, type, and illustrations are luxurious, and the subject-matter somewhat startling, as in the case of the article on "Tarpon-fishing."

THE AMERICAN CARNATION SOCIETY.—Our American exchanges are full of the doings of this Society, which held its annual meeting at Chicago on January 25. The reports enable us to obtain some notion of the enormous scale on which the Carnation is grown in the States. We note that the newly-elected President is Mr. PETER FISHER, the raiser of Mrs. Lawson Carnation. By the way we notice that Mr. FISHER is a native of Scotland, who migrated to Boston some quarter of a century ago. It is remarkable how many of the foremost gardeners in the States are of British origin. We do not wonder at their migration, but we are surprised that we hear so little of them after they have left the old country till some special circumstance brings them into note.

SEEDLESS APPLES.—Attention is directed by the *Country Gentleman* to the fact that the seedless Apple, like the stoneless Plum, has been known to pomologists for more than two centuries. Pliny and Theophrastus, at the beginning of the Christian era, are stated to have referred to seedless and bloomless Apples. ROBERT MANNING, of Boston, in 1869 wrote that he had seen this Apple under the name "No-core" at an exhibition of the Massachusetts Horticultural Society several years before. He said that he had also received a similar Apple from a French nurseryman. The greatest previous outbreak of the seedless Apple craze in this country occurred about 1890, or less than fifteen years ago. As to the merits of the variety Prof. BAILEY said, "It appears to possess no value aside from its curiosity." H. E. VAN DEMAN, then U.S. Pomologist, said of it: "My opinion is that the variety is practically worthless as a fruit, but it is quite interesting as a curiosity. Anyone who plants trees of this variety will be disappointed, except in having his curiosity satisfied." "*American Fruits.*" [Apart from malformations of this kind, which are common enough, botanical readers will know that among Rosaceæ unisexual flowers are by no means rare. ED.]

WELBECK.—Mr. JAMES GIBSON, late of Danesfield Gardens, Marlow, was appointed, on the 14th inst., to be head gardener to the DUKE of PORTLAND, Welbeck Abbey, Notts.

"THE GARDEN MAGAZINE." — Messrs. DOUBLEDAY, PAGE & Co., of 133, East Sixteenth Street, New York, the publishers of *Country Life in America*, have issued the first number of a new monthly gardening periodical under the above-mentioned title. It is destined to be, in the words of the promoters, a beautiful periodical, devoted to that most fascinating and refreshing of all subjects, the garden. Among the contributors we notice the names of Professor BAILEY and Professor WAUGH, and others, who afford a guarantee that the magazine will be all that it is intended to be. In an article on the best evergreen trees to be grown in the Northern United States the writer advocates the employment of native rather than of exotic species, a precept that might in this country at least easily be pushed too far. But the peculiarity of this article is that over the text is imprinted a figure of a life-sized spray of some Pinus—perhaps P. Strobus.

LIÈGE.—The Bulletin of the *Federation des Sociétés Horticoles de Belgique* for January 31 contains details concerning the congress to be held at Liège from May 8 to 10 inclusive in connection with the great flower-show to be held at the same time. The attendance of foreign guests is invited. The President is Baron M. VAN DER BRUGGEN, Minister of Agriculture, and the Chairman of Committee, M. CLOSON. Communications should be addressed to M. CH. GONTIER, 101, Rue de Statte, Huy, Belgium.

NEW PLANTS — Among newly-introduced plants mentioned in the Catalogue of Herr HEINRICH HENKEL, of Darmstadt, is Aponogeton monostachyum, the flowers of which are represented as on a simple spike, and described as creamy-yellow in colour. Many interesting aquatic plants newly introduced or not generally known are included in the list.

ROOKS. — As the result of an elaborate enquiry in Germany as to the utility or mischievousness of rooks, it is quoted in an article in the *Journal of the Board of Agriculture*, that crows and rooks are, on the whole, more useful than harmful, especially in the breeding season. He is however of opinion that it is requisite in some cases to diminish their numbers.

"THE GARDENING YEAR-BOOK AND GARDEN ORACLE."—This is a handy little book, prepared by the editor of the *Gardeners' Magazine*, for use in the garden office. It contains, in addition to an almanac and diary, articles on the events of the past year, new introductions, whether of flowers, fruit, or vegetables, a calendar of operations, notes on quarter days and taxes, so that the grave and gay are well mixed. The mean temperature of each day is given, but no locality is mentioned where the record was made, nor any indication as to the number of years from which the mean is taken. The anarchical condition of Russia might be illustrated by the statement that in the thermometer used in that country "the graduation begins at boiling-point, which is marked zero, and the freezing point is 150." This thermometer must surely be the one in use in the topsy-turvy house! We agree with the editor that this book is, as might be expected, literally packed with valuable information of an up-to-date character, and that a shilling spent in procuring a copy would be a profitable investment. It may be had from the office of the *Gardeners' Magazine*, 148, Aldersgate Street.

SPRAYING FRUIT-TREES.—It is satisfactory to read that the practice, of which we so frequently urged the adoption, is now carried out by many fruit farmers. We had imagined that our recommendations had been mostly ignored, but judging from an article in the *Journal of the Board of Agriculture*, the practice is spreading. To avoid risk of poison, no spraying should be done after the fruit has attained a fourth of its full size. The article should be read and acted on by all fruit-growers.

HARPER ADAMS COLLEGE.—The report of the experiments made under the direction of the Staffordshire County Council and of the authorities at the above-named college in Shropshire are chiefly interesting to agriculturalists. The following details concern Potato-growers in general. The trials of different varieties of Potatos at Orton and Cresswell are particularly interesting at the present time. The varieties to which the attention of farmers is particularly called are Sir John Llewelyn, Royal Kidney and The Factor. Each of these Potatos is an excellent cropper, a good resister of disease, and of full flavour when cooked. At Hilderstone the artificial manures appear to have had little effect upon the Potato-crop when used in conjunction with farmyard manure. The largest yield was produced by plot 3, which received 20 tons of farmyard manure per acre, the total weight being 17 tons 4 cwt. 2 qr. 21 lb., an increase over the unmanured plot of 7 tons 8 cwt. 1 qr. 1 lb. There were very few small Potatos, the crop was free from disease and of excellent quality. The good effects of a change of seed from the North are very plainly demonstrated from the results at this centre. The very high prices paid for the newer varieties of Potatos have resulted in the excessive propagation of many of them. This is thought by many authorities to be harmful to the variety, and that its vigour will be materially impaired. In order to obtain some reliable information on this point an experiment has been started on the following lines:—Three plots of ground were planted with—(1) whole sets; (2) cut sets, single eyes; (3) plants from cuttings. The variety selected was Northern Star. The whole sets and cut sets (plots 1 and 2) were planted May 6, and the cuttings were grown on in a cold frame, and planted out early in June. The rows were 3 feet apart, and the plants 18 inches apart in the rows. The ground was in very good order, and no manure was considered necessary. The plants grew rapidly, and from the appearance of the haulm it was impossible to see any difference in the plots. Disease was entirely absent. It will be seen from the table that the cuttings produced the heaviest weight of ware and smallest amount of seed size.

CARNATION FLAMINGO.—Mr. JNO. ROBSON, nurseryman, of Altrincham, informs us that he exhibited a basket containing "Flamingo" Carnation at the last meeting of the Royal Horticultural Society, and that the variety was awarded a Gold Medal in New York two years ago. We have repeatedly stated that it is impossible for us to undertake to notice every exhibit at these or any show. The matter has to be determined not only by the importance of the subject, but also by the time and space at our disposal.

OVER-SEA SUPPLIES FOR JANUARY.—Under this heading we give the monthly account abridged from the Trade and Navigation returns of the oversea trade of this country—only that connected with agriculture and horticulture being recorded here. It is hoped the reader may thus be able at a glance to see how this great division of industry stands in relation to the others—the figures on the one side being compared with the residue for the other. "Our" side will be divided into four classes, the first two affecting the "inner man," the third his immediate environment—from clothes to household goods; the fourth as connected with manufactures generally, as also seeds for sowing and for working up into other material. Figures connected with the animal kingdom have been carefully excluded. The Board of Trade Returns for the first month of the year give the total value of the imports as £47,766,460, which, compared with the figures for the same month last year, £46,132,520, shows an increase of £1,633,940. It matters not here whether the increased value is due to a rise in prices or to an increase in bulk. Our classification table will readily show the relationship of the products of the soil to the mass of imports:—

IMPORTS.

CLASS: DESCRIPTION OF PRODUCE.	1904.	1905.	Difference.
	£	£	£
Class I. — Cereals, and other field crops — Wheat, Barley, Oats, &c.	16,283,715	15,857,558	—426,157
Class II.—All other food cultures — Tea, Coffee, Fruit, &c.	3,851,771	4,429,088	+577,317
Class III.—Used in manufactures — clothing, household goods, &c....	9,404,030	8,425,533	—978,497
Class IV. — Miscellaneous — including seeds, flowers, &c.	3,011,774	2,858,552	—153,222
Values of Produce...	32,554.290	31,570,733	—983,557

It will be interesting to florists to note the figures with which they are concerned. The January imports of flowers amounted to £21,046 as compared with £23,395 in January, 1904—or a decrease of £2,349. The timber-merchant may note that there is a falling off amounting to some £301,164 (£737,851, compared with £1,039,015 in the first month of last year). It is of interest to note here that by arrangement between Archangel sawmill proprietors and the officials of the Crown Lands Department in that province, timber will in future be so supplied to the mills that a heavy reduction can be made in the prices paid by shippers. Turning now to the section of fruit and vegetables, we extract the following figures:—

IMPORTS—JANUARY.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	190,121	199,673	+9,552
Apricots and Peaches	1,169	142	—1,027
Bananas	55,799	73,923	+18,124
Grapes	174	2,390	+2,216
Lemons...	38,785	30,590	—8,195
Nuts—Almonds ...	24,129	44,600	+20,471
Others used as fruit	28,723	27,973	—750
Oranges...	300,730	334,904	+34,174
Pears	685	1,341	+656
Plums	478	60	—418
Unenumerated ...	6,887	16,478	+9,591
Vegetables, raw—			
Onions ... ...bush.	67,287	85,249	+17,962
Potatos ... ... cwt.	180,422	24,694	—155,728
Tomatos ... „	32,081	32,001	—80
Unenumerated „	37,256	29,363	—7,893
Totals ...	965,728	903,383	—62,345

It is satisfactory to note here that since the issue of our last monthly table the Union Castle Company's ships have brought the following fruits from the Cape:—Apricots, 268 boxes; Peaches, 363 do.; Plums, 1,364 do.; Nectarines, 45; and Pears, 16—a total of 2,056 boxes. Coming now to—

EXPORTS,

we note in them an increase of £906,412—£24,989,777 for last month, compared with £24,083,365 for January in last year. These exports are entirely of British and Irish materials; but there is a separate "foreign and colonial" list, amounting to, for last month, £6,113,887 sent here to our "shop" for customers to purchase, and this section contains both agricultural and horticultural produce brought from oversea. We have but little of our own raising to spare for other folk.

GRAFTING AZALEAS.—There is an interesting article in the last number of the *Jardin* descriptive of the methods of cultivating the Indian Azalea at Dresden. In the nursery of M. SEIDEL the Azaleas are propagated either by cuttings or by grafting. Cunningham's White Rhododendron is commonly used as the stock. The Rhododendron itself is propagated by cuttings taken from plants grown in the shade. The young plants are potted in July, placed in a cool-house, and grafted in the following winter.

PUBLICATIONS RECEIVED.—*Lubrose Paints* (C. T. Druery, Moorgate Station Chambers, London) gives information as to the uses of this "imperishable paint."—California Olive Oil. University of California Agricultural Experiment Station. Contribution to the Study of Fermentation, University of California, College of Agriculture.—Botanical Department, Trinidad, *Bulletin of Miscellaneous Information*, January. Contents: Cacao Disease (Diplodia Cacaoicola), Essential Oils, Theobroma angustifolia, &c.—*Bulletin of the Jamaica Department of Agriculture*, January. Contents: Cotton Conference in Jamaica, Notes on Grape-vine Culture, Nitrogen in Agriculture, &c.—University of California publications, College of Agriculture, Agricultural Experiment Station: *The Hop Aphis*, by Warren T. Clarke. Bulletin No. 160.—*L'Œnophile*, January; Revue Mensuelle de Viticulture, Œnologie et d'Œnotechnie: Paris, Bordeaux, and Caudéran.—*Agricultural Bulletin of the Straits and Federated Malay States*, October, 1904. Edited by H. N. Ridley. Contents: Manuring Rubber, Fibre Plants, Ramie Trade of the World, &c.—*Annual Report of the Bureau of Industries for the Province of Ontario*, 1903. Part I., Agricultural Statistics; Part II., Chattel Mortgages.—*Annual Report, List of Members, Schedule of Prizes &c., of the National Dahlia Society*, for 1904.—United States Department of Agriculture, Farmers' Bulletin No. 208, *Varieties of Fruits recommended for Planting*, compiled by W. H. Ragan.—Bureau of Plant Industry, Bulletin No. 69, *American Varieties of Lettuce*, by W. W. Tracy.—New Hampshire College Agricultural Experiment Station, Durham, Bulletin 111, April, 1904, *Ten Experiments with Potatos and Potato Culture for New England*, by F. Wm. Rane and H. F. Hall.—Bulletin 112, May, 1904, *Experiments in Destroying Black-Flies*, by Clarence M. Webb.—New Jersey Agricultural Experiment Stations, *The Use of Fertilisers*, a review of the results of experiments with nitrate of soda, by Edward B. Voorhees.—*Il Coltivatore*, 12th Febbraio, edited by Professor A. Marescalchi, Casale Monferrato.—*Bullettino della R. Società Toscana do Orticultura*, January, 1905.

UNDERMOUNT, BONCHURCH,
ISLE OF WIGHT.

[SEE SUPPLEMENTARY ILLUSTRATION.]

THE type of Primula sinensis shown in the Supplementary Illustration to the present issue has risen much in popular estimation during the past few years. Primula "stellata" is said to have originated in this country from seeds of the ordinary strain of P. sinensis, and in Messrs. Cannell's nursery at Swanley a variety was known under the name of "Lady." Whether Prof. de Vries would consider this as a new species produced by mutation is open to question. The original plants produced very numerous flowers, small in size, and having each petal marked with a wedge-shaped notch. They grew very tall, and the inflorescences were of lax habit, the leaves were long and narrow, and the petioles were dark in colour. Crosses were soon effected between "stellata" and the florist's type until the varieties obtained represented almost every degree of variation between the two types. Such a variety as that shown in the illustration is one combining some of the characteristics of both; it partakes of the habit of P. stellata, but the flowers are larger in size and possess greater substance.

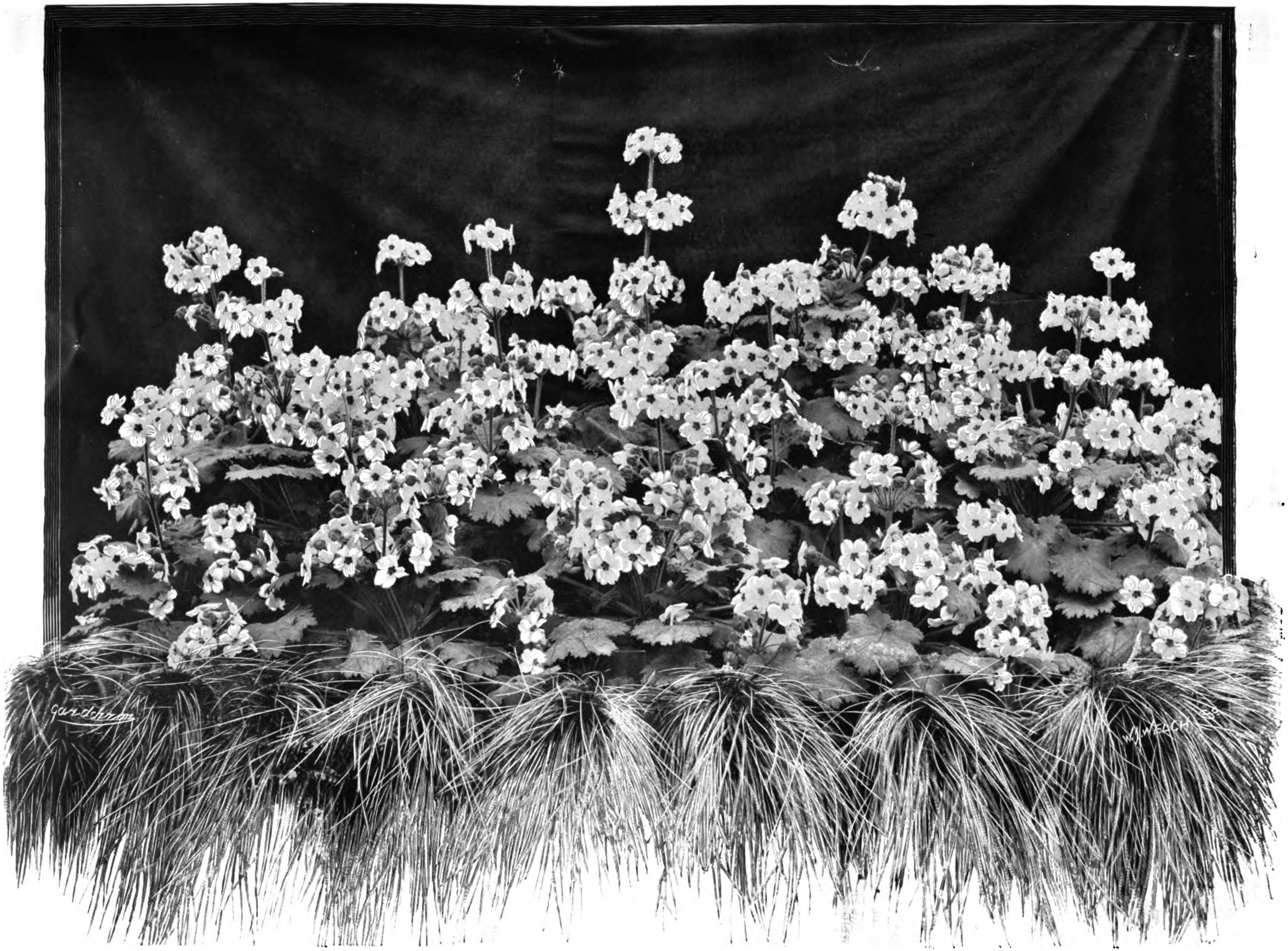
Chinese Primulas are cultivated with much care and success in the gardens at Undermount, near Ventnor, the residence of Henry Michel, Esq.; for besides the "stellata" varieties, similar to the plants illustrated, we were shown on January 30 a number of plants in flower representing an excellent strain of the florist's type; also some splendid plants of the old double-flowering varieties that have to be propagated by means of offsets. This type is little cultivated now, and there is no wonder, seeing that such good semi-double flowers as were seen at the last meeting of the Royal Horticultural Society can be raised true from seeds. At the same time such plants as we saw at Undermount growing in 7-inch pots, which were not a bit too large for them, were exceedingly attractive, and the variety grandiflora particularly had superior flowers to those obtainable from seeds.

In the glasshouses and particularly in the conservatory at Undermount, there are plenty of instances of good plant cultivation; but for us, even in January, the chief interest of the place was out-of-doors. Imagine, for instance, our being able to cut fully-opened white flowers of the fragrant Pittosporum Tobira growing 16 feet high on the exterior of the conservatory! Yet such was the case; and by its side were flowers of another fragrant plant, Cheimonanthus fragrans, fully open. In sheltered nooks and borders adjacent to but outside the warm-houses, Clivia miniata had flowers almost ready to expand; Adiantums and Pteris were growing in the crevices of the walls, Solanum jasminoides was trained against the same wall, Dimorphotheca Eckloni and Cinerarias were growing, and also Hedychium Gardnerianum, which last season produced sixteen tall growths and an abundance of flowers. Flowers were appearing on plants of Acacia armata in the open borders; big bushes of Coronilla glauca were in flower, also Escallonia macrantha, and plants of Megasea crassifolia. On a bank, the face of which was covered with Ivy, there were groups of Gazanias, Wallflowers, and Mesembryanthemums, and open flowers on all these species. Other tender shrubs or plants we noticed included Abutilon vitifolium, Acacia floribunda, A. lophantha, and other species, Agathæa cœlestis, and Phlomis fruticosa (Jerusalem Sage). Further plants in flower were Vinca major, Kniphofias (Tritomas), which are said to flower during the whole year; double-flowered white Stocks, Petasites fragrans (winter-flowering Heliotrope), Roses, especially the variety Madame Berard; Erica Cavendishii; E. mediterranea was 4 feet high, and formed quite a bush, and the collection of Ericas generally is much prized. Lobelia Cavanillesii or L. laxiflora angustifolia is generally considered to be a greenhouse perennial, but in this garden it was growing nearly 3 feet high among the herbaceous plants, and bearing several of its yellow or reddish-yellow flowers. L. laxiflora has also been known as Siphocampylus bicolor.

But perhaps one of the most striking features in this garden was a group of Spring (!) Cabbages, perfectly ready to be cut. The plants were on a little bank facing the sea, and had quite solid, white-looking "hearts." Enquiry elicited the information that they were raised from seeds sown on July 28, and that they were planted-out on September 2, 1904. The varieties were Flower of Spring, Ellam's Early, and Sutton's April. Ellam's Early appeared to have "turned in" as early as any of them.

The gardens at Undermount are in the care of Mr. George Cheal.

Supplement to the "Gardeners' Chronicle."



GROUP OF STELLATE VARIETY OF PRIMULA SINENSIS IN THE GARDENS AT UNDERMOUNT, BONCHURCH, I.W.

VEGETABLES.

ROTATION OF KITCHEN GARDEN CROPS.

(*Continued from p.* 99.)

Onions.—As already mentioned, the best vegetable to succeed Celery is the Onion. The deep disturbance of the soil, and the liberal manuring of the ground for the previous crop, provide conditions for the successful growth of Onions, with the assistance only of a light dressing of some approved artificial manure, such as nitrate of soda, which I have found excellent. The Onions should be sown during the first week in March. It sometimes happens that the Celery has not all been removed by that time; should this be the case, a good plan is to take up what plants remain, and plant them closely together in a shady and cool corner of the garden, where they can be preserved in a fresh condition for a much longer time than if left exposed to the drying winds of March in the open ground. This enables the grower to clear the ground in good time for sowing the Onions. Before these are sown the ground should be levelled, and afterwards trodden as hard as a heavy man can tread it. The drills should be drawn at distances 1 foot apart. If the crop is required for home consumption no thinning of the young plants is necessary, unless the seeds have been sown exceptionally thickly. The majority of the Onions thus produced without thinning will be quite large enough for kitchen purposes, and will keep longer in sound condition than those of a larger size, while the small ones are always in demand for pickling.

If larger specimens are required for exhibition or other purposes, higher culture and increased space must be given them.

Autumn Cabbage.

The crop to succeed the Onion is one of the most indispensable of the kitchen-garden, namely autumn-sown Cabbage, for spring and summer supply. These should be planted towards the end of September, using plants raised from seed sown about August 12, and as this crop occupies the land until the following September or October, a dressing of manure should be given when preparing for the crop. As soon as the Cabbages are removed in early autumn the land should be again heavily manured, and if time can be spared, bastard-trenched, and made ready for the reception of Strawberry plants.

Strawberries.

If these latter have been previously prepared by carefully layering, either in the ground or in pots, by the time the land has been prepared for them the plants will be strong, and have abundance of good roots, and should produce a moderate crop of fine fruit the following summer, and exceptionally heavy crops in the two succeeding seasons. At the expiration of this period (three years) the Strawberry plants in their turn must be cast away, making room for a crop of winter and spring Broccoli.

Broccoli.

These should be planted as soon as the Strawberry crop is over, which will be about the end of July. No preparation of the land is necessary for the reception of the Broccoli other than cleaning the surface of weeds. Plant the Broccoli in the solid earth without any digging, and use a crowbar instead of a "dibble" to plant with. Grown in this hard soil they make hardier and sturdier growth, and are in better condition for resisting injury from frosts during hard winters than when grown under more generous treatment. By planting succession crops of early summer and autumn Cauliflower and of winter and spring late Broccoli it is quite possible to produce a supply of those valuable vegetables for every week in the year. *O. Thomas.*

(*To be continued.*)

VANDA WATSONI.

Our illustration (fig. 52) represents a new species of Vanda in which the flowers, with the exception of the crest and interior of the sac, are pure white. The plant was introduced by Messrs. Sander and Sons, St. Albans, through their collector, W. Micholitz. When not in flower it so closely resembles V. Kimballiana that the plant might be easily mistaken for that species. The flowers, however, possess characteristics entirely distinct from V. Kimballiana, as will be seen on reference to a full description which appeared in our issue for February 11, 1905, p. 82. The species was recommended an Award of Merit by the Orchid Committee at the last meeting of the Royal Horticultural Society.

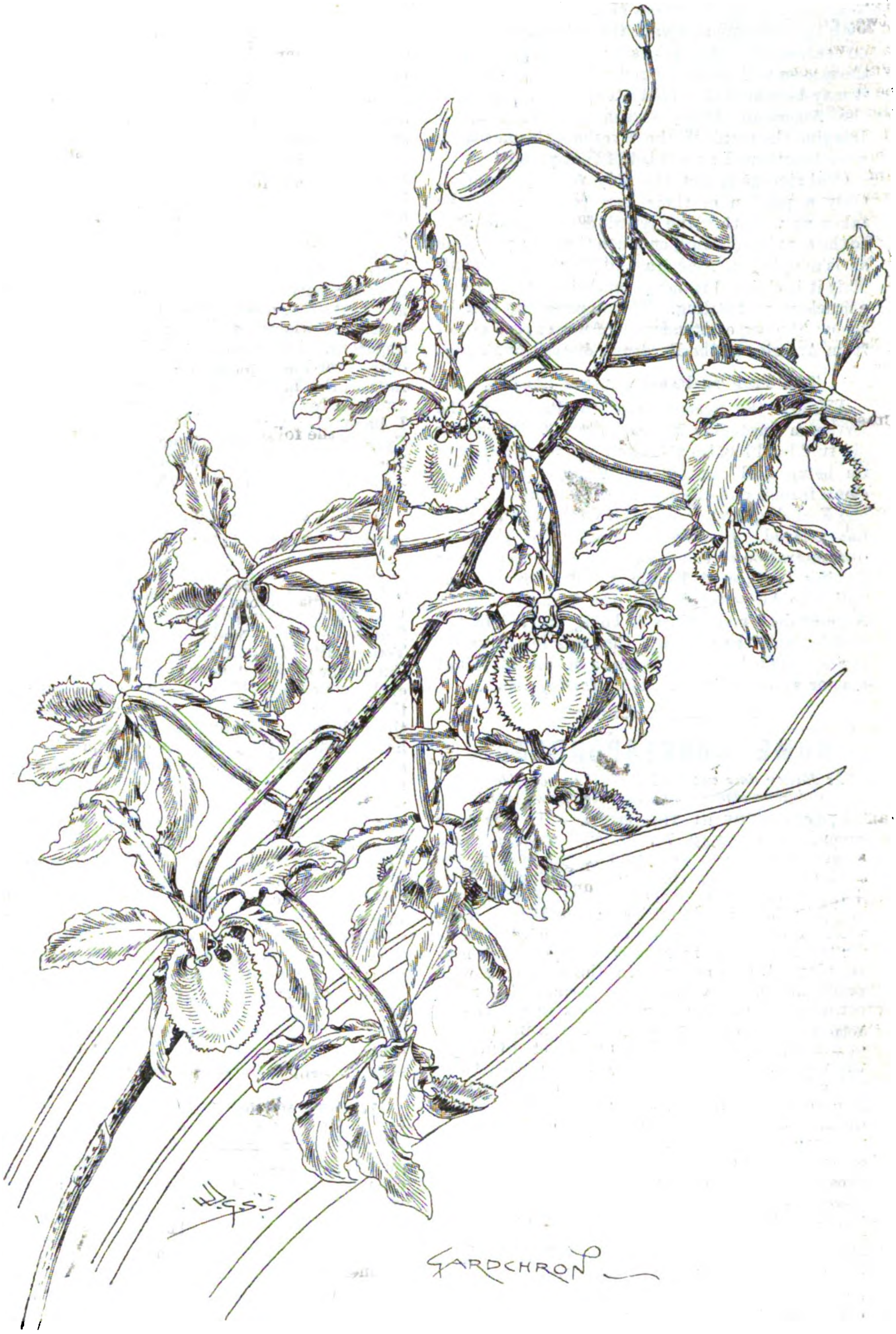


Fig. 52.—Vanda Watsoni, a new species: flowers white.

MARKET GARDENING.

A REMEDY FOR GLUTTED MARKETS.

It has long been an axiom in the Vale of Evesham that half a crop of fruit is more remunerative to the grower than a full one; and many a time have Plums, especially the commoner sorts, been allowed to rot on the trees because the price they realised did not pay for picking. Growers who have sent their produce away to the distant markets on commission have often been brought into debt. How is this state of things to be altered? The Avon Orchard Co., whose headquarters are at Evesham, is determined to make an effort in this direction. It claims that cold storage has been found to answer excellently in

America, Canada, and other countries, and that it will be successful here; at any rate they are prepared to risk it, and have acquired extensive premises in the town, where the necessary machinery will be laid down at once. It is intended at first to provide accommodation for 100 tons of fruit, but this can easily be increased to 250 tons when required. If the system is found to answer, it will doubtless be adopted by others, with the consequent result that the markets will be controlled, better prices will be realised, and the season will be prolonged. In this connection it may be stated that cold storage has prolonged the American Apple season by four months. Imagine the result if the Evesham Plum season were lengthened by a third of that period!

Cold storage is not the only remedy for glut. Only a portion of their new premises will be taken up with this, the remainder being devoted to the canning of fruit, on much the same principle as is adopted in America and on the Continent. This it is claimed is more economical and quite as efficacious as bottling. This department will be under the superintendence of an expert either from America or the Bordeaux district of France.

THE TRIP TO PARIS AND ITS SEQUEL.

Already the recent trip to Paris of the Evesham gardeners is bearing fruit. A piece of old turf land has been broken up preparatory to its being laid out on the French plan. The small frames and cloches have been ordered, and the French gardener who is to take charge of it has arrived. Shortly we shall have practical demonstration of the possibility or otherwise of forcing Lettuce at Evesham. This experiment will also be watched with the keenest interest. A great deal more glass is being erected in the district, and the reproach that this fertile valley is very much behind the times in this important matter will soon be removed. *Hartley Smith.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

TREE-FERNS IN THE OPEN.—In his note upon Tree-Ferns, p. 70, "F. M." writes: "If a sheltered spot can be found in the garden, the Dicksonias may be risked outside during July, August and the early half of September." Happily there are localities in the British Isles where Tree-Ferns may not only be risked outside for two and a-half months of the year, but may be planted permanently in the open-air with practically no risk whatever. I can call to mind considerably over a dozen gardens in the south-west where Tree-Ferns are to be seen in the best of health, though absolutely unprotected through the winter. No plants can compare with these noble Ferns in the tropical character of their lace-like coronal of fronds, and visitors from colder districts can scarcely be brought to believe that they are as permanent features in the landscape as are the surrounding Oaks, Elms, and Firs that provide them with the needful shade and shelter. Such a picture as they present when growing in the open air is, naturally, only to be seen under the genial climatic conditions that prevail along the southern coasts of Devon and Cornwall, in the Isles of Scilly, and in certain spots in the South of Ireland. Shelter is a most important consideration for these Ferns when grown in the open, and is best provided by trees. Sometimes they may be met with growing on lawns or in spots obviously fashioned for their reception. In such cases, however beautiful they may be, they impress the mind with being exotic and not indigenous growths. On certain rare occasions, however, they may be seen amid such surroundings that they appear to have sprung from seed where they stand, and to harmonise with their environment as fitly as with that of their native tropics. Such an ideal home for Tree-Ferns has been found on Sir Arthur Pendarves Vivian's estate of Bosahan, on the southern bank of Helford River, a few miles distant from Falmouth. Here a deep and narrow tree-embowered coombe runs winding downward from the higher ground to the water's edge. On either side of the path stand the tall, brown stems, crowned with the green filigree of arching fronds, enjoying the absolute shelter from blustering winds provided by the thickly-growing trees that clothe the steep sides of the little valley. Even when the white horses course the neighbouring Channel scarce a leaf stirs in the recesses of this sequestered retreat, and the memorable blizzard of March, 1891, which created such havoc in the south-west, did the Ferns, the majority of which had then been planted one year, no material harm. In all there are about thirty Tree-Ferns in the dell, many of which are of large dimensions, one particularly stately specimen standing in a somewhat isolated position being 12 feet in height, and having a frond-circumference of over 50 feet, while its stem is more than a foot in diameter. A spot such as that described is admirably fitted for the culture of Tree-Ferns in the open, since it provides the requisite shelter, shade, and moisture; while the picture of these lovely denizens of the tropics, growing naturally amid surroundings devoid of any hint of man's handiwork, holds a charm that is absent where suggestion of human labour is apparent. Dicksonia antarctica is, I believe, the only Tree-Fern planted at Bosahan, and it is, indeed, the hardiest as well as the handsomest and best for planting in the open in this country. I have also met with D. squarrosa, as well as Cyathea dealbata and C. medullaris, planted-out, but all the finest specimens that I know are D. antarctica. *S. W. Fitzherbert.*

PRIMULA, WALLFLOWER, ETC.—I am sending you specimens of a type of Primula from which I am trying to save seed. Do you think it would have any commercial value when fixed? [We do not, judging from the specimens received. ED.] I have also sown seed from an almost white Wallflower. Would a white one be desirable? [Yes.] The vitality of seeds is marvellous. I sowed new Cucumber seed last year that had been inadvertently left on a shelf in a saucer in a cold shed; they were frozen and thawed repeatedly all through the winter, and at the time of sowing I had to rub the fungus-mould off them. Yet to my surprise every one grew much quicker and stronger than others that I had obtained from the seedsman, and made more satisfactory growth in every way than they did. The variety was Sutton's Epicure, a good, dark-skinned, "green-fleshed" Cucumber, with little core. This disproves the idea of our forefathers, who preferred old seed dried hard by carrying it for a long time in their waistcoat pocket, under the impression that it made the plants short-jointed and earlier fruiting. It must be remembered, however, that they grew their plants principally on beds of rank manure, and probably had not learned the value of potash when applied in the early stages of growth. I have left some of the same seed in the same position until now, and shall test them shortly. *An Old Subscriber and Constant Reader.*

TRANSPLANTING SHRUBS.—I read with interest Mr. Miller's note on p. 90 respecting the removal and replanting of medium-sized shrubs and trees. He stated that there should be a circular trench dug 3 ft. from the bole; but this would, after having taken a foot off all round as advised, leave 4 feet diameter of soil to be lifted bodily out of the hole. A more simple plan would be to dig a trench on one side of the circular trench, in such a manner that it will slope gradually to the bottom of the roots of the specimen, so as to allow the planting barrow or lorry to be pushed back, and by leaning the specimen to an angle, say of 45°, the planting-barrow may be easily got under the ball of soil, which will not be so liable to be broken as if it were lifted by several men. When the tree has been placed on the planting-barrow make it secure by using soft rope, putting some felt or other soft material around the place where the rope is to be fixed, so as not to damage the bark. The hole where the specimen is to be planted should be made exactly of the same shape as that from which it has been taken, and by pushing the lorry back into the spout-like trench the specimen will be very easily unloaded. Another little item I think ought to have been mentioned, and that is that the outside of the circular trench should be picked in, and not left like the sides of a pot, as this would give the roots a better chance, and they would not suffer so much in dry weather. *A. G.*

MARKET MEASURES.—I note your remarks as to what the Board of Agriculture has done in quoting the different market measures, but which I am afraid will not become universal. In Southampton fruiterers expect a bushel of Apples to weigh 50 lb.; some ask for 53 lb. All goods should be sold by weight instead of measure, as in the case of corn. Some sell Potatos by the sack, which may be any weight, according to the size of the sack. *E. M.*

THE ROYAL HORTICULTURAL HALL.—Referring to the note on p. 105 of the last issue alluding to St. James' Hall and its horticultural associations, "R. D." has missed two main points of his subject. Firstly, that the Royal Horticultural Society held shows there in 1858 and in 1859, during the gloomy period after the sale of 21, Regent Street, when the offices were hidden in St. Martin's Place, to blossom at South Kensington in 1860. Secondly, as St. James's Hall gave a suitable site for horticultural shows, the Royal Horticultural Hall now is doing its best to carry on both the horticultural and the musical traditions of its predecessor now to be demolished. *T. E. S.*

SEED PACKING.—We were much surprised to read the following remark contained in the note contributed by Mr. Watson on p. 91, where he says:—"For seeds generally I know of nothing better than paper packets or calico bags, and the more moisture there is in the seeds when thus packed the better. Hermetically sealed tins or bottles should never be used." How far such a remark is applicable to seeds sent through the tropics here we will not argue, but so far as it applies to the majority of English seeds for despatch abroad we feel we can speak with authority, it having been our privilege for over half a century to conduct an important business with the Empire of India and our Colonies in tropical and sub-tropical climates, and it has been over and over again proved that the ordinary vegetable and flower-seeds will rarely retain their vitality if sent away from here without some special treatment which eliminates a large percentage of the moisture contained in them, when harvested naturally in our temperate climate. To overcome this difficulty we have for many years not only subjected this class of seeds to a special drying process, but enclosed each packet in tinfoil, and this again is placed in a hermetically sealed covering from which the air is exhausted. We quite agree that roots such as Potatos, Artichokes, Dahlias, &c., which are principally composed of water, must on no account be put under tin, but cannot understand an authority from Kew applying the same restrictions to seeds generally. *James Carter & Co.* [The tin box as sent abroad had a double lid, but was by no means "hermetically sealed." ED.]

APPLES.—During a long life I have become fully aware that tastes differ widely. Some people prefer an acid or semi-acid Apple; others one that is less so, while a large number give preference to varieties that are sweet, and not a few like what is termed, a pine flavour. This therefore renders the task of coming to a right conclusion extremely difficult. In these times of almost universal smoking, I am apt to think that the palate loses the power of delicate discrimination. I have, I think, discovered that there is always a difference between the fruit of a yellow, green, red, or reddish-yellow Apple, and the most highly-flavoured Russet. Then I hear it said that some are brisk and piquant besides being crisp, while another tells me that he greatly prefers a soft-fleshed kind; another that he wishes for something with "a bite in it," beyond that of mere excellence. So it appears also that an orange-coloured flesh is not always that wished for, but the whiter the better. Then soil and locality have much to do with it, as witness an instance in the Alfriston, which grew well at Brenchley, while here it is almost destroyed by canker. After these remarks who can rightly say out of the vast number now grown which is "the" best? As I said in my last letter I divide the sorts into three distinct series. Though I am sorry to say that with some anything that "is new" is said to be the best, whereas the old is at once neglected, though it is not surpassed. As for myself I confess to a leaning towards many Apples that I tasted and enjoyed long, long ago, for I have found that many appreciate, or think they do, by being led by the opinion of others, when they are told, "Ah, there is nothing now can be equal to this"; or "This is a long way the best ever grown." It is my idea, rightly or wrongly, that Nature only provides a certain amount of flavouring material to every tree, consequently apples of high excellence are produced in fewer numbers than those grown in greater quantity, and hence considered a good "market Apple." For my own part I think that no fruit is good, commercially good, if it is of a high order of merit; and market fruits should be graded, and thus the public, seeing what they are buying, would not afterwards find themselves deluded by having a lower stratum of inferior forms and sizes. If this were done I feel sure that the sale of our "home growths" would eventually prove to be far more profitable. There are in my opinion four divisions in Apples, of size, form, colour and flavour. I would observe among the yellows that I know of none superior in form or colour to the Golden Noble; when cooked it is excellent, rich, bright, and for Apple-sauce delicious, and of an orange-amber tint. Among the best of our judges of quality none surpasses the "chef," and the well-known Alexis Soyer, a cook of high repute, said that this variety as a culinary Apple was of the best, and that for sauce he always purchased it whenever he could do so. Some say that grand fruit, Warner's King, does not keep, but I have not found this so, and am now using it in fine condition. I like Bramley's Seedling much. Of green, none surpasses the Winter Greening, the French Crab, or the Gooseberry. The most beautiful in colour that I now have is Newton Wonder, and it is much liked. The Beauty of Kent has been very fine, and has had many admirers, though it does not hang on the tree so well as could be wished; but why is it that the most highly decorative fruit of all is now so discarded? I allude to the crimson "Sops in Wine." It is sixty years ago since I saw a tree growing beside a pond in Sussex, and the glowing charm is still fresh in my memory. And what an extraordinary Apple it is, with its skin, flesh, core, and even the seeds crimson! It was charming, and not only a curiosity, but, gathered when just ripe, most pleasant for the dessert. Everyone that tasted it, like Oliver Twist, "wanted more." And yet I cannot find it mentioned in any nurseryman's Apple catalogue, though for years I have searched for and wanted a couple of trees. Then for dessert, what surpasses the Russets for their peculiar flavour? The Rosemary Russet has not only a Pine-apple flavour, but is on the sunny side, bright in colour and in form elegant; and so are the Aromatic and Egremont Russet, not large in form, but delicious. Forty years ago the Boston Russet was much in request. Why not now? Then there are Brownlees Russet, and many more. But among so many of the highest class fruit that we have in Apples, who shall decide which is the best? He must be a bold man. Yet I will chance it! So I conclude by saying that for all purposes I prefer the Blenheim Pippin to any. *Harrison Weir, Appledore, Kent.*

"AN ONION FAMINE."—A paragraph has been going the rounds of the general Press stating that an Onion famine was a probable contingency. No reason has been given for this prospective famine. Seeing that we obtain so many Onions from France now, it is possible there may be a shortage of bulbs on the Continent. But it is always a matter for wonder that we should need to import Onions at all. We cannot grow many things that warm climates only will produce; but just as we can, if we will, grow the finest and best of Apples and Potatos, for instance, so can we grow the very best Onions. It is, indeed, a rare circumstance when we fail in getting good Onions. A very cold, wet summer is very unfavourable, but still these seasons occur seldom. Generally an Onion crop is one of the most reliable, and whether good or bad, is much more matters of variety and of culture than of season. What fine crops we see almost everywhere, in small gardens and on allotments of autumn-sown Onions, and what can be grown so well by cottagers or amateurs can be grown equally well and even better by professional growers on a large scale. But the mistake of sowing soft Tripolis and Roccas, instead of firm Spanish round and globe types, is continuous. Seedsmen perpetuate the error; writers of calendars and of advice to cottagers do the same, with the result that whilst huge crops relatively are produced the bulbs soon soften and decay. They have no keeping properties. Were it the rule to sow and grow in the same way only the hard brown Spanish varieties the bulbs would keep a long time after ripening. They would be equally fine, and, because firm and keeping, would be a better marketable commodity. But on deeply worked rich soil—for no crop so much needs "intensive" (that is the new term) culture as the Onion does or better repays it. Then when in the autumn the crop is removed, the ground, only needing light pointing over, is in splendid condition to receive Cabbage-plants for early spring cutting. One of our leading vegetable gardeners alternates plots of ground yearly for spring-sown Onions and Cabbages, getting in each case splendid crops; indeed his ordinarily sown Onion crop must when cleared run to fully 20 tons per acre; and what a paying crop that must be! A remarkable crop of Onions was seen last year at Highclere Castle, where Mr. Pope, having obtained some thirty-six samples of diversely named Onions, raised each one in pans or shallow boxes under glass in March, grew on the plants to become strong, then planted out in rows 14 inches apart, the plants being 6 inches apart in the rows. Not only was the general sample a fine one, though some varieties gave better bulbs than others, but these ripened very hard and clean. It represented per acre an immense produce, and on similar soil and culture a big crop should repay the original outlay some ten times over. *A. D.*

EARLY PEACHES (see pp. 55, 91, 106).—Dryness at the roots will cause any variety to drop its buds; but in the case of Alexander, Waterloo, Amsden June, and Hale's Early, all of which varieties are from America, there are other causes for bud-dropping. They are all far more liable to drop their buds than are our own English varieties. While at Ketton I had many opportunities of experimenting with these varieties, and I concluded that they ripen their wood earlier than the other kinds, and are also not able to withstand excitement in the dark days of winter so well as the others, as they are natives of a country where the sky is not liable to be overclouded for a week or ten days in winter without intermission as our sky is very often. On the other hand, I know some people succeed in growing them; possibly they do better under the old style of glazing, and where the trees are fully exposed in autumn by removing the lights. I was not able to test these two points, as I had Rendle's patent glazing, and for other varieties of Peaches and Nectarines I am convinced there is nothing equal to it; but the American varieties failed. I found nothing so good as Rivers' Early Louise. Started with fire-heat on December 1, it ripened its first fruits from April 30 to May 17, according to the season, and bore good crops of fruit, many of them 8 oz. and upwards in weight; it is of very good flavour when well grown, and the best variety I know for the earliest crop. One tree of Early Beatrice ran it very closely for first favourite, but this was the only tree of this variety that has proved worth growing so far as my experience goes; the fruits of all the others were very small, though undoubtedly the same variety. The good tree was grafted on an extra strong and vigorous stock, which had a rough, grey bark; its fruits often weighed 8 oz. each, and generally ripened about a fortnight earlier than Early Louise under the same conditions. Unless one could be sure of Early Beatrice being on the right stock, it is not worth growing, and even then only for ripening at the end of April and beginning of May. I have not yet had an opportunity of growing the newer varieties—Rivers' Duchess of Cornwall and Duke of York—but should certainly try them if I were planting an early Peach-house; they are nice-looking varieties of good flavour. All of the early-ripening varieties I have tried require extra care in handling and packing, owing to their skins being very tender, and abundance of air while ripening, in order to obtain a good flavour. Alexander and Waterloo, which are alike for all practical purposes, are excellent for growing on warm walls outside, as they ripen in the Midland Counties about July 12, and bear good crops of fair-sized fruits when grown in this way, without receiving any extra attention. Early Beatrice and Early Louise are very small, and practically of no value for growing outside. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

—— It is known to most gardeners that dryness at the root is one of the chief, if not the chief, cause of bud-dropping in Peaches; but I think that there must be some other cause that the varieties Alexander and Hale's Early should drop their buds in the manner they do. They are excellent on outside walls for fruiting when the indoor supply is failing, but they appear to me to be too impatient of early forcing, and this I think is the cause of the bud-dropping. I have grown these varieties side by side with other early Peaches, under exactly the same conditions, but have always found them drop a large number of their buds, while the other varieties growing with them have not suffered in the least. Alexander I have long discarded for forcing purposes, and Hale's Early will find no place under glass with me when our tree of Duchess of Cornwall has covered a little more wall space. Alexander and Hale's Early are only second-rate in flavour, and unless Peaches are preferred, we have two finer and more reliable fruits in Early Rivers and Cardinal Nectarines. Peach borders at no time should have any suspicion of dryness about them, whether the trees are in active growth or apparently at rest; while with all stone fruits the forcing should be commenced very slowly. I believe the Calendars of garden operations in the *Gardeners' Chronicle* attract the attention of practical gardeners more than formerly. *T. H. Slade, Poltimore Gardens, Exeter.*

HANLEY (STAFFS.) HORTICULTURAL FETE.—The announcement in your last issue would have been more correct had it been worded "resigned" instead of "retired" from the horticultural secretaryship of the above fete. May I take this opportunity of thanking all those gentlemen for their past kindness in helping me to build up the show so successfully? *J. Kent.*

POTATOS.

EFFECT OF MANURES ON FLAVOUR.—Practical experience has taught me to discard artificial manures in order to maintain the highest possible quality in Potatos. Of course, care in cooking is an important point, and all should understand that it is necessary to boil the tubers slowly until they are three parts cooked, then pour off the water, replace the lid, and stand the saucepan again on the hot plate until the tubers are quite cooked.

I enclose Potato tubers of the variety Up-to-Date, grown from divisions of one tuber, and produced from adjoining plots of ground, and from a stock where artificials have not been used for four years. During these four years the average crop has been 6¾ tons per acre. Farmyard manure only was used. No. 1 tuber was grown with farmyard manure at the rate of twenty loads per acre; No. 2 with farmyard manure at the rate of ten loads per acre, and 2 cwt. nitrate of soda; No. 3, with 4 cwt. of superphosphates, and 2 cwt. nitrate of soda per acre; No. 4 is from ground which had no manure for four years; during these four years the ground has been cropped with some of the Brassica family; previous to that it was meadow land, what is usually termed maiden ground.

Herewith is the result of a cooking test, viz., No. 4, 1st; No. 1, 2nd; No. 2, 3rd; No. 3, 4th. If we could only clear the matter by examination, then science would have rendered a real service to a great industry. *Geo. Kent, Norbury Gardens, Dorking.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 14.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Dr. M. C. Cooke, Messrs. Douglas, Bowles, Odell, Baker, Worsley, Gordon, Druery, Michael, Saunders, and Chittenden (Hon. Secretary).

Apples Rotting.—Mrs. LEE sent some Apples which appeared sound externally, but which on cutting were found to be rotten. Dr. COOKE reported upon these as follows: "There is every reason to believe that the Apples are affected with 'Brown-rot,' caused by Monilia fructigena, which has been more common than usual during this winter. It is a fungous disease, although the fungus is not yet fully developed in the Apple sent. It is capable of passing on to healthy Apples in storage, hence all diseased fruits should be removed and destroyed as soon as the disease appears. The same disease attacks Apples, Pears, Cherries, Apricots, and almost all pulpy fruits, reducing them to a brown rot."

Worm-eating Slug.—Mr. SAUNDERS showed a specimen of the shell-bearing slug, Testacella haliotidea, which subsists on earth-worms, and consequently spends the greater part of its time in the ground.

A New Greenhouse Pest.—Mr. CHITTENDEN showed a number of specimens of a cockroach, Leucophæa surinamensis, in all stages of development. The species, which is widely distributed in the tropics, has been found only two or three times in England, and was not until now known to breed here. It was recently found in great numbers in tan at Broomfield Lodge, Chelmsford, and appears to be particularly injurious to Orchids.

"*Navel*" *Oranges.*—Mr. CHITTENDEN showed a specimen of this well-known form of Orange. All the larger fruits on some trees of the variety "Sustain," grown at Widford Lodge, Chelmsford, had sported in this peculiar way, while the smaller fruits were of the normal form.

Old Age in Plants.—A letter on this subject was received from C. B. LUFFMANN, Esq., of Victoria, Australia, the consideration of which was deferred till the next meeting.

Fungus on Tree Root.—Mr. SHARPE, of Westbury, sent a specimen of a fungus growing on the roots of a tree by a brook, which Dr. COOKE determined to be Peziza coccinea.

WEST INDIAN AGRICULTURAL CONFERENCE, 1905.

JANUARY 4 TO 13.—The fifth West Indian Agricultural Conference was held at Port-of-Spain, Trinidad, on the above dates. The representatives included the principal officers connected with the chemical, botanical, and educational services in the West Indies, and the scientific officers on the staff of the Imperial Department of Agriculture, as also delegates from the Agricultural Boards and the chief agricultural societies.

The Conference was formally opened on January 4 in the presence of a large gathering of the leading members of the official, commercial, and agricultural communities, when a hearty welcome was extended to the representatives by His Excellency the Governor (Sir Henry M. Jackson, K.C.M.G.). In his opening address the President of the Conference (Sir Daniel Morris, K.C.M.G., the Imperial Commissioner of Agriculture), reviewing the agricultural situation, expressed the opinion that marked progress had taken place in regard to the Sugar-cane, Cacao, Cotton, and other industries, and referred to the hearty manner in which the planters and the scientific men were working together for the welfare of the West Indies.

In the proceedings of the Conference a prominent position was assigned to the Sugar-cane industry. Papers that were presented to the Conference in connection with this industry included reviews of the principal insect and fungoid pests of the Sugar-cane, the field treatment of cane "tops" for planting, and the polarimetric determination of sucrose.

Trinidad being the foremost Cacao-producing colony in the West Indies, considerable interest attached to the discussion of important subjects relating to that industry. Mr. Hart read a short paper dealing with experiments that are being carried on with the view of improving the health and productiveness of Cacao-trees. In Trinidad it was considered that shade trees were indispensable; in Grenada Cacao trees did not appear to require shade, while in other islands Cacao was grown both with and without shade. It was suggested by the President that a series of experiments might be carried out in Trinidad by the Agricultural Society with a view of obtaining definite information on the subject.

The attention of the Conference was next turned to the fruit industry. Mr. J. R Bovell (Barbados) read a short paper upon the efforts to establish a fruit industry in Barbados. Barbados enjoyed an advantage over the other islands in this matter, since Barbados was the last port of call. Experience had shown that fruit could be satisfactorily shipped from Barbados to England for eight months of the year in the ordinary holds of the vessel, without cool storage, provided the ships were adequately ventilated. Two of the ships of the Royal Mail Company had been fitted with cold storage appliances, and in the case of shipments by these vessels there had been no difficulty as to the condition of the fruit on arrival.

The subject of the recently-established Cotton industry was next brought forward. Brief statements were made by Mr. J. R. Bovell (Barbados), Dr. Watts (Leeward Islands), and Mr. W. N. Sands (St. Vincent).

Under the heading of "General subjects" a number of interesting papers were read by representatives. These included "Agricultural Banks," by the Hon. W. Fawcett (Jamaica); "Experiments in establishing Rubber Plantations," "Anthrax," and others. Attention was also devoted to matters connected with agricultural education.

Through the kindness of the Trinidad Agricultural Society, several interesting excursions were organised. These included a visit to the Usine St. Madeleine, a trip to the celebrated Pitch Lake, and visits to several Cacao and sugar estates. By means of these excursions the representatives were enabled to obtain a good idea of methods of cultivation adopted by Trinidad planters.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

FEBRUARY 13.—At the meeting of the Committee on the above date thirty-five new members were elected. The sick pay has been heavy during the past month, the amount paid out being £51 11s. Several members were allowed to transfer from the lower to the higher scale. The annual general meeting will be held on Monday, March 13.

ROYAL METEOROLOGICAL.

THE usual monthly meeting was held on Wednesday evening, the 15th inst., at the Society's rooms, 70, Victoria Street, Westminster, Mr. Richard Bentley, F.S.A., President, being in the chair. Mr. E. Mawley presented his report on the phenological observations for the year 1904. The weather of the phenological year ending with November, 1904, was chiefly remarkable for the persistent rains in January and February, the absence of keen frosts in May, the long continuance of hot and dry weather in July, and the small rainfall during the autumn. Throughout the year wild plants came into flower behind their usual dates, but at no period were the departures from the average exceptional. Such spring migrants as the swallow, cuckoo and nightingale made their appearance in this country at as nearly as possible their usual time. The yield of Wheat per acre was the smallest since 1895, while those of Barley, Beans, and Peas were also deficient. On the other hand, there were good crops of Oats, Potatos, and Mangels. The best farm crops of the year were those of Hay, Swedes, and Turnips. Both Corn and Hay were harvested in excellent condition. Apples were everywhere abundant, and all the small fruits yielded well, especially Strawberries, but there was only a moderate supply of Pears and Plums.

The other papers read were "Observations of Meteorological Elements made during a Balloon Ascent at Berlin on September 1, 1904," by Dr. H. Elias and Mr. J. H. Field; and "The Winds of East London, Cape Colony," by Mr. J. R. Sutton.

LINNEAN.

FEBRUARY 16.—Prof. S. H. VINES, F.R.S., in the Chair.

Miss E. WILLMOTT, F.L.S., exhibited thirty water-colour drawings of Roses by Alfred Parsons, A.R.A., drawn at Great Warley, for her forthcoming volume on the genus Rosa, together with some admirable chromo-lithographs for the same volume.

The first paper was read by Mr. JOHN GILBERT BAKER, F.R.S., F.L.S., entitled "A Revised Classification of Roses." He dealt with the genus by dividing it into three groups. In the first group primary species were enumerated; in the second, sub-species and varieties; in the third, the principal hybrids. The primary species as estimated by the author are sixty-nine in number, and they are classified under eleven groups, which may be briefly diagnosed as follows:—I. *Simplicifoliæ*, with simple, exstipulate leaves. II. *Systylæ*, with styles protruded beyond the disc as a united column. III. *Banksianæ*, with free, deciduous, linear stipules. IV. *Bracteatæ*, with adnate stipules, having fruits and prickles in infra-stipular pairs. V. *Microphyllæ*, like the last, but the fruit is glabrous, with a thick green pericarp. VI. *Cinnamomeæ*, like the last, but the fruits red and glabrous, with a thin pericarp. VII. *Spinosissimæ*, prickles very unequal, never in stipular pairs. VIII. *Gallicanæ*, like the last, but with the prickles slightly unequal, and the leaflets coriaceous and rugose. IX. *Caninæ*, prickles equal, not in stipular pairs, leaves glabrous or slightly pubescent. X. *Villosæ*, like the last, but the leaves are very hairy. XI. *Rubiginosæ*, like the last, but the leaves are very glandular beneath.

The geographical distribution can be briefly stated as follows:—Five species are found south of the Tropic of Cancer in elevated situations, two in Abyssinia, one in the Neilgherries, and two in Mexico. There are six geographical regions in the North Temperate Zone, each with a considerable proportion of endemic species. 1. Europe, with 29 species. 2. Northern Asia, with China and Japan, 26 species. 3. Western Asia, with 18 species. 4. India, with 9 species. 5. Western North America, with the Rocky Mountains, with 10 species. 6. Eastern North America, 6 species.

The second paper was entitled "The Botany of the Anglo-German Uganda Boundary Commission," the authors being—Polypetalæ, Mr. Edmund G. Baker, F.L.S.; Gamopetalæ excl. Convolvulaceæ, Mr. S. Moore, F.L.S.; Convolvulaceæ, Apetalæ, and Monocotyledons, Dr. A. B. Rendle, F.L.S.

GARDENERS' DEBATING SOCIETIES.

CARDIFF GARDENERS' ASSOCIATION.—A meeting of the above Society was held at the Sandringham Hotel on Tuesday, February 7, Mr. Tom Clarke in the chair. Mr. Jones, a member of the Newport Gardeners' Association, delivered a lecture entitled "Annuals and how to Grow Them." Many of the most suitable subjects for this purpose were mentioned, especially those available for decorative purposes. The discussion brought out many interesting details on the subject.

KINGSTON GARDENERS'.—At the last meeting Mr. Jas. Gibson lectured on "Winter Vegetables," and gave details of cultivation and storage of all kinds of vegetables which mature naturally in winter, or which may be forced for use during winter and spring. Brussel-Sprouts, Savoys, Broccoli, Kales, Cabbage, Kohl Rabi, Carrots, Parsnips, Beet, Celery, Leeks, Spinach, Parsley, Turnips, Swedes, Asparagus, French Beans, and many others formed subjects for remark. The effects of the recent fogs were discussed, and even such a hardy variety of Broccoli as Late Queen was said to have been crippled in one garden. An appeal was made on behalf of the Royal Gardeners' Orphan Fund (see p. 105). *J. T. B.*

CRAWLEY AND DISTRICT GARDENERS'.—A paper on "Plants for Conservatory Decoration all the Year," was read by Mr. Goldsmith, Fircroft, Withdean, Brighton, on Wednesday, February 8, Mr. Brooker, Deerswood, presiding. Mr. Goldsmith dealt with his subject in a practical manner, giving his method of propagating and growing such plants as Poinsettia pulcherrima, Begonia Gloire de Lorraine, and Euphorbia jacquiniæflora, for making a display during the winter months. For succession during spring and summer, Cinerarias, Primulas, Amaryllis, Gloxinias, Begonias, Carnations, Fuchsias, &c., were recommended. Mr. Goldsmith described from his long experience the most suitable soil required for striking cuttings and for their subsequent growth.

[Numerous Reports are of necessity held over. Ed.]

LAW NOTE.

WE have received from the defendants in the case alluded to on p. 92 a statement giving their version of the occurrences, but as the matter is still before the Court it is desirable not to publish any further remarks till the verdict is given.

ENQUIRY.

CRANBERRIES FOR MARKET SUPPLY.—I am anxious to obtain some information and advice on the cultivation for market of Cranberries, Blackberries, Brambles, and Raspberries. I well remember some twenty years ago visiting in America a Cranberry-bog, where the crop yielded a very considerable profit, but I did not at the time take sufficient interest or note of the procedure beyond observing that irrigation played a most important part, not only in dry weather but also in winter, for the plants were flooded and totally submerged in frosty weather. I understand the fruit is not cultivated in England, and should be glad to know the reason. My intention is to lay down twenty to thirty acres with the fruits named, and I seek information as to the most suitable land and district, and details as to crops and cultivation. *Bramble.* [*Cranberry Culture*, by J. J. White, a book published by Orange, Judd & Co., 245, Broadway, New York, in 1870, affords very full information as to every phase of the cultivation of this crop in America, and illustrates the methods employed to flood the land. The Cranberry requires certain conditions in respect to position and soil, and unless a very suitable locality is selected the enterprise will be unsuccessful. Blackberries, such as Rubus laciniatus and the "Wilson Junior," may be cultivated successfully on similar supports to those afforded Raspberries. ED.]

MARKETS.

COVENT GARDEN, *February* 22.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Acacia Drummondi, per doz.	18 0-24 0
Aralia Sieboldi, doz.	4 0- 6 0
Aspidistras, green, per doz. ...	18 0-24 0
— variegated, per doz. ...	30 0-42 0
Azalea indica, p. doz.	18 0-36 0
— mollis, p. doz.	24 0-42 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0
— Sprengeri, doz.	8 0-12 0
— tenuissimus per doz. ...	8 0-10 0
Begonia Gloire de Lorraine, doz.	12 0-18 0
Boronia megastigma, per dozen	12 0-24 0
— heterophylla.	18 0-24 0
Calla æthiopica, per doz. ...	8 0-10 0
Cinerarias, per dozen	6 0-10 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	18 0-30 0
Cyclamen persicum, per doz.	9 0-12 0
Cyperus alternifolius, p. doz.	3 0- 5 0
— laxus, p. doz.	3 0- 4 0
Dracænas, p. doz.	9 0-24 0
Daffodils, Yellow Trumpet, doz.	5 0- 8 0
Ericas, per doz....	15 0-24 0
Euonymus, per dozen	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
— in 32's, p. doz.	9 0-18 0
Ficus elastica, p. doz.	9 0-12 0
— repens, p. doz.	6 0- 9 0
Genistas, per doz.	8 0-10 0
Hyacinths (3 in a pot), per doz.	6 0- 9 0
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Latania borbonica, per doz. ...	9 0-15 0
Marguerites, doz.	6 0-10 0
Primula sinensis, per doz. ...	4 0- 6 0
— obconica, per dozen ...	4 0 6 0
Solanum capsicastrum, per doz.	6 0- 8 0
Spiræa japonica, per doz. ...	8 0-12 0
Tulips, in boxes, each	1 6- 2 6

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.
Anemones, pink, per dozen bunches ...	2 0- 3 0
— fulgens, per doz. bunches.	3 0- 4 0
Carnations, per doz. bunches.	9 0-12 0
Fern, French, per doz. bunches.	6 0 —
Freesias, p. doz. bunches ...	2 0- 4 0
Lilac, per bunch.	2 6- 3 6
Marguerites, per doz. bunches.	2 0- 3 0
Mimosa (Acacia), per basket ...	6 0- 8 0
Narcissus, per basket... ...	6 0-10 0
Ranunculus, per doz. bunches.	9 0-12 0
Violets, blue, per doz. bunches.	1 0 2 0
— Parma, per large bunch...	3 6- 4 6

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 9- 1 0
— — medium, each ...	0 4- 0 6
— — short sprays per bunch...	1 0- 2 6
— Sprengeri ...	0 9- 1 6
— tenuissimus..	0 9- 1 0
Adiantum cuneatum, doz. bun.	6 0- 9 0
Croton leaves, doz.	1 0 2 0
Cycas leaves, each	1 0- 1 6
Fern, English ...	3 0- 4 0
Galax leaves (American), per dozen bunches.	2 6 —
Ivy-leaves, bronze	1 6- 2 0
— long trails, per bundle ...	1 0- 2 0
— short green, per dozen bunches ...	1 0- 1 6
Myrtle	3 0- 4 0
Smilax, p. dozen.	4 0- 6 0
Hardy foliage (various), per dozen bunches	3 0- 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	3 0 —
— Jerusalem, p. sieve	1 0 —
Asparagus, bunch	3 6- 4 0
— Giant	12 6 25 0
— Paris Green...	4 6- 5 0
— Spanish, bunch	1 7 —
— Sprue, p. doz.	10 0 —
Beans, dwf., p. lb.	1 6- 1 9
— Madeira, per basket... ...	2 0 —
Beetroot, bushel	1 6 —
Broccoli, Sprouting, bag... ...	1 6- 1 9
Brussels-Sprouts, si.	1 0- 1 6
Cabbages, p. bag	1 0- 1 6
Carrots, 12 bunch.	2 0 —
— bag	2 0- 2 6
Cauliflowers, doz.	1 9- 2 0
— Cherbourg ...	0 9- 1 0
— Italian, bskt.	1 9- 2 6
— St. Malo, doz.	1 0- 2 0
Celeriac, per doz.	3 0 —
Celery, doz. bnchs.	7 0-12
Cress, doz. pun.	0 9 —
Cucumbers, doz.	6 0-12 0
Curled Kale, bush.	1 0- 1 0
Endive, per doz.	1 9 —6
Garlic, per lb. ...	0 4 —
Greens, bushel ...	1 0- 1 6
Horseradish, foreign, p. bunch	0 8 —
Mint, per dozen...	3 0 5 0
Leeks, doz. bndls.	1 6 2 0
Lettuces, Cabbage, per dozen ...	0 9- 1 0
Mushrooms (house) per lb.... ...	0 10-2 8
Onions, pickling, per sieve ...	5 0- 6 0
— English, cwt.	14 0-15 0
— Dutch, p. bag.	10 0-12 0
— Valencia, case	12 0-14 0
Parsley, per doz. bunches ...	2 0- 2 6
Parsnips, per bag	3 0 —
Peas, French, pkt.	0 10-1 2
Potatos, per ton	50 0-90 0
— Frame, lb. ...	0 4- 0 5
— Jersey, lb. ...	0 4- 0 5
— Teneriffe, cwt.	10 0-15 0
Radishes, p. doz. bunches ...	0 8 -1 0
Rhubarb, York, per dozen ...	0 8-0 10
Salad, small punnets, per doz	0 9 —
Savoys, per tally	3 0- 5 0
Seakale, per doz.	9 0-10 0
Shallots, p. sieve	4 0- 5 0
Spinach, bush. ...	3 6- 4 0
Tomatos, per case	10 0-14 0
— English, p. lb.	1 3- 1 6
Turnips per doz.	1 6 —
— per bag ...	1 6- 2 0
Turnip-tops, bag	1 6 2 0
Watercress, per doz. bunches.	0 6 0 8

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per doz. bun..	4 0- 6 0
— mollis, per dz. bunches ...	12 0-15 0
Bouvardias, per doz. bun.	6 0- 9 0
Calla æthiopica, per doz. blooms	3 0- 4 0
Camellias, per dz. blooms	1 6- 2 0
Carnations, best American vars., per dz. blooms	3 6- 6 0
— smaller blooms, per doz. bun..	18 0-30 0
Cattleya labiata, per doz. blooms	8 0-12 0
Cypripedium insigne, per doz. blooms	2 6- 3 6
Daffodils, single yellow, per dz. bunches ...	4 0- 9 0
— double, per dz. bunches ...	5 0- 6 0
— Emperor ...	6 0- 8 0
— Golden Spur, per doz. bun.	6 0- 8 0
— Henry Irving, per doz. bun.	6 0- 7 0
— princeps, per doz. bunches.	5 0- . 0
— Sir Watkin, per doz. bun.	6 0- 9 0
Dendrobium nobile, 12 blooms.	2 6- 3 0
Eucharis grandiflora, 12 blooms	2 0- 3 0
Euphorbia jacquiniæflora, bunch	1 6- 2 6
Gardenias, per dz. blooms	4 0- 6 0
Hyacinths, Roman, per doz. bun. ...	6 0- 8 0
Lilac (English forced), per bun.	3 0- 4 0
Lilium auratum, per bunch ...	2 6- 3 0
— lancifolium rubrum and album, per bunch... ...	2 0- 3 0
Lilium longiflorum, bunch	4 0- 5 0
— tigrinum, bun.	2 0- 2 6
Lily of the Valley, per dozen bun..	6 0-18 0
Marguerites, white, per dozen bun.	3 0- 4 0
— yellow, per dz. bunches ...	3 0- 5 0
Narcissus gloriosus, per doz. bun..	2 0- 3 0
— paper-white, per dozen bunches ...	1 6- 2 6
— Pheasant's Eye, per doz. bunches ...	3 0- 4 0
— Soleil d'Or, per dozen bunches ...	1 6- 2 0
Odontoglossum crispum, pr. dz. blooms	2 6- 3 0
Pelargoniums — (Zonal) double scarlet, per doz. bunches.	4 0- 8 0
— salmon and pink, per doz. bunches ...	6 0- 8 0
Roses, Niphetos, pr. dz. blooms	2 0- 4 0
— Bridesmaid, pr. dz. blooms	4 0- 6 0
— Kaiserin A. Victoria, per dozen blooms	6 0- 9 0
— General Jacqueminot, per dozen blooms	4 0- 8 0
— C. Mermet, pr. dozen blooms	4 0- 6 0
— Sunrise, per dozen blooms	3 0- 4 0
Tuberoses, on stems, per doz. bunches.	18 0-24 0
Tulips, per dozen bunches... ...	6 0-12 0
Violets, blue, English, per dz. bunches... ...	1 6- 3 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, bushel ...	2 0- 7 0
— English, sieve or half bushel	1 6- 3 0
— — per barrel.	8 0-15 0
— Newtown Pippin ...	35 0-55 0
— — per case ...	22 0-24 0
Bananas, bunch.	6 0-11 0
- loose, per dozen	1 0 —
Chestnuts, per bag	16 0 —
Cobnuts per lb. .	0 5½ —
Cranberries, per box	13 0 —
Custard - Apples, per dozen ...	4 0-10 0
Grape-Fruit, per case	15 0 —
Grapes, Gros Colmar, per lb.	1 6- 3 0
— Alicante, per lb.	1 3- 2 6
— — per barrel.	16 6-20 0
Lemons, per case	9 0-18 0
Lychees, per box.	1 6 —
Oranges, per case	8 0-12 0
— Blood	6 0- 7 6
— Navel	12 0-13 0
— Jaffa, per box	12 0-13 0
— Seville ...	5 6- 6 6
Pears, Easter Beurré, per case	30 0 —
Pines, each ...	2 0- 4 0
Strawberries, A., per lb.	12 0-16 0
— — B., per lb...	5 0- 8 0

REMARKS.—Fruits are now arriving from the Argentine Republic, including Plums, Peaches and Pears, prices for which are:—Plums, 6*s*. to 8*s*. per case; Peaches, 5*s*. to 8*s*. ditto (fifteen to twenty fruits), and Pears, 6*s*. per case of thirty fruits. Cape Plums realise from 5*s*. to 10*s*. per case; Peaches per box of from fourteen to twenty-four fruits, from 4*s*. to 10*s*.; Nectarines per box of from eighteen to twenty-four fruits, 10*s*. to 15*s*.; Cherbourg Broccoli realised from 9*d*. to 1*s*. per dozen; St. Malo, 1*s*. to 2*s*. ditto, and Cornish crates of this vegetable from 6*s*. to 8*s*. per crate.

POTATOS.

Dunbars, 80*s*. to 90*s*.; various, home-grown, 55*s*. to 75*s*. per ton. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

At the end of last week there was a revival of trade, and pot plants sold fairly well. The cold winds on Monday, however, caused a check to trade, and on Tuesday morning the market was again very quiet. A splendid consignment of Indian Azaleas was in the market on Tuesday, but at 8 30 A.M. many of these plants remained unsold. Trade conducted after this hour means reduced prices. Plants of Cinerarias were abundant and of good quality, but these sold very slowly, Genistas were also over plentiful. Marguerite plants are well flowered, but some are not well furnished with foliage. Plants of Cyclamen are good; the weather does not affect these much. Ericas also stand the cold well; E. persoluta alba continues good; E. Wilmoreana is well flowered. Plants of Spiræa japonica are now plentiful, and S. multiflora compacta is now obtainable. A few good Lilac plants are seen, and these make from 3*s*. 6*d*. to 5*s*. each. Azalea mollis is more abundant. Hyacinths and Tulips continue over plentiful, and for these prices vary considerably. Richardia (Calla) æthiopica has but little demand. Among the Acacias now seen A. cordata, A. verticillata elegans, and A. Drummondi are good, while large plants of A. armata are fairly well flowered. Begonia Gloire de Lorraine is still seen, but is not so plentiful. There is little variation in the supplies of Palms, Ferns, and other foliage plants. Several growers have already commenced marketing roots of hardy border plants, and on Saturday there was a good trade in these, but the recent cold weather has put a check on this. Well-flowered Pansies were in the market on Saturday. Supplies continue to be exceedingly abundant.

CUT FLOWERS.

Although the cold weather may have checked some subjects, Roses are now at their best, or almost so; the variety Bridesmaid is of a good colour. Flowers of General Jacqueminot, though not large in size, are very bright in appearance, and are now fairly plentiful; "Caroline Testout" is the best pink variety seen. Daffodils are abundant; Golden Spur is the finest yellow, and best samples of these realise good prices. Princeps is good, but this being such a free-flowering variety, supplies are overdone; Telemonius plenus is also over-plentiful; Emperor sells fairly well. The small-flowered Narcissi Soleil d'Or and Paper-white, from the Scilly and Channel Islands, are good, but over-abundant. Carnations are now plentiful, and even choice specimen flowers remain on the stands at closing time. Flowers of Eucharis, Camellias, and white Azaleas are all over-plentiful. Supplies of Gardenias are short, those seen realise high prices; Lily of the Valley is not so abundant, and may advance in prices at any time. In Orchid blooms there is little variation, but prices are possibly lower. Supplies of Lilium longiflorum are likely to be short, those flowers which should be coming in now were ruined by the fogs in December. Callas are not so plentiful, and with a shortage of Liliums, prices for Callas may go up. Violets are abundant and of good quality, but if the present cold weather continues supplies will fall off.

Among imported foliage we now get the Galax leaves from America, both in green and dark-bronzy shade. *A. H., Covent Garden, Wednesday, Feb. 22.*

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending February 18, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.	NIGHT.							
FEBRUARY 12 TO FEBRUARY 18.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	43	41	50	39	33	42	43	43	Tot 0·02	2	26

THE WEATHER IN WEST HERTS.

A change to wintry weather.—The long and almost unbroken term of warm weather, which had lasted three weeks, came to an end on the 20th, since which time low temperatures have prevailed. During the recent warm period there occurred but one unseasonably cold day, and only one cold night. Since the change came the winds have been cold, but as yet the exposed thermometer has only registered 7° of frost. The ground still remains rather warm for the time of year, the temperature at 2 feet deep being about 2° warmer, and at 1 foot deep 1° warmer, than is seasonable. On two days there occurred frequent sharp showers of rain, hail, soft hail, snow, or sleet, but the total measurement only amounted to about a quarter of an inch, bringing up the aggregate rainfall for the last five weeks to only about half an inch altogether The percolation through both the soil gauges, which had almost ceased, was re-started by the snow, &c., of the last two days. The sun shone on an average for two and a half hours a day, which is about a seasonable duration. The winds were, as a rule, light, and on two days in the windiest hour the mean record was 17 miles —direction west. There was again a seasonable amount of moisture in the air at 3 o'clock in the afternoon. A selected patch of yellow Crocuses first showed an open flower on the 21st, which is two days earlier than its average date of flowering in the previous eighteen years. *E. M., Berkhamsted, February* 21, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 12[illegible].]

ANSWERS TO CORRESPONDENTS.

Address: *D. J.* George Massee, Esq., Gateacre, Sandycombe Road, Kew, Surrey.

Asters: *F. H.* The Chinese Aster is attacked sometimes by a worm (Enchytræus parvulus), and more commonly by a fungus disease. We do not think your plants fail owing to unsuitable cultivation, but to disease. When the plants again reach the stage you have described, kindly send us a specimen for examination.

Carnations: *Improver* The plants are attacked by a fungus, Helminthosporium. Burn the diseased plants and spray the healthy ones with weak Condy's fluid —*H.* and *J. E.* Your Carnation is of very large size, of brilliant colour, and very fragrant, but it is not of the best florist's type in respect to form and petal. — *Carnation.* Assuming your stock was vigorous when the growths were put into the small pots used for layers, we would recommend the use of a little bone-meal and Thomson's Vine and Plant Manures and soot, in the proportion of three parts of the manures to one of the soot; add about a 6-inch potful of this mixture to a barrowload of soil. This should be repeated at all subsequent pottings, and you may increase the quantity of manure if the plants are really robust. Such a soil, if other conditions are suitable, will produce the necessary colour and vigour; but "Carnation" must bear in mind that no amount of feeding will produce the desired results if conditions conducive to successful cultivation are absent. We do not recommend sulphate of ammonia; its action is too stimulating to be of any permanent advantage, and we should not elect to propagate from stock that had been so treated. Water in which sheep droppings have been thoroughly soaked, if clarified, and a slight addition of soot made to it, will afford an excellent liquid manure; while Clay's Fertiliser, if afforded occasionally, will help in maintaining the green colour of the foliage which is so much admired. Clay's Fertiliser should be applied at the rate of, say, a teaspoonful to a 6-inch potful of soil. Or it may be used as a powder on the surface of the soil, or in water. If applied as a powder, the manure should be covered slightly with fine soil.

Cemetery Superintendent: *East Anglian.* If the Superintendent has personally to undertake the gardening department, then a qualified gardener is the proper person to receive the appointment. If the election has been made from political motives, as you suggest, then the action of the electors is most reprehensible. Efficiency and personal character are happily quite independent of political opinions, and should be kept so.

Ferns: *Pteris.* The brown marks are probably caused by cold draughts or drip. It is not fungus.

French Chrysanthemum-raisers: *W. M.* M. Ernest Calvat, 40, Rue Saint-Laurent, Grenoble; M. Aug. Nonin, 16, Route de Paris, à Châtillon-sous-Bagneaux, and others. The novelties raised by the Marquis de Pins may be obtained from M. M. Anatole Cordonnier et Fils, de Bailleul (Nord), France.

F R.H.S.: *J. H. S., Liverpool.* The "honour" is not to be bought, nor is it to be had by examination. Get the recommendation of some Fellow, send your cheque to the Secretary, Vincent Square, Westminster, and if no Fellow present objects you will in all probability be elected at the next meeting.

Grafting Roses in Winter: *S. W.* (1) We suppose you mean the grafting of Roses to be grown-on in heat for the supply of buds for use as soon as the outdoor stocks are ready for budding. The process generally adopted is that known as whip-grafting, and the scion used contains only one bud. (2) *The Book of the Rose,* by Rev. A. Foster-Melliar, M.A., to be obtained from our Publishing Department, price 6*s.* 4*d.*, post free. The work of grafting and other means of propagation are thoroughly explained in this book.

Grass Seeds: *Lawn Grass.* The mixture you name is a very good one, if modified to suit the particular soil for which it is to be used.

Hybridisation of Gladiolus: *J. E. E.* We have no knowledge of the paper you name, nor can we say where you could obtain a report of the Conference on Plant-breeding. You might apply to the Secretary of the Horticultural Society of New York.

Malformed Swedes: *J. C. G.* The development of adventitious buds on the roots of certain members of the Natural Order Cruciferæ, such as Turnips, and others of the Brassica genus, &c., is not at all uncommon, and instances can often be noticed when passing through fields in which crops of these plants are growing. The cause is generally attributed to some agency, such as that of insects or bacteria, setting up injury to or an irritation in the affected region, causing an excessive flow of sap to that particular part, such as is seen in the specimens you forward. As the Turnips are really swollen stems and not true roots, the production of adventitious buds is not surprising. You will find an excellent illustration of this kind of malformation in the *Gardeners' Chronicle* for January 3, 1877, p. 149.

Manure for Mushroom Beds: *Mushroom.* The material should be in an intermediate condition in regard to moisture, neither very dry nor wet. If some be squeezed in the hand and no moisture is emitted the manure is too dry, and should be damped. But it is much better not to allow the natural moisture to evaporate so much before making the bed so that it would be necessary to add water. After such an addition the temperature of the bed will not rise so high or continue so long as it would otherwise have done, and there arises considerable difficulty in making the bed firm. From your letter we think you require to use damper material more intermixed with straw. Insert the spawn when the heat of the bed is from 75° to 80° and is declining. Be careful to use fresh living spawn.

Names of Fruits: *J. C. W.* Hollandbury.—*C. R.* 1, Reinette du Canada.—*Mill Hill.* There were two Apples, not three. 1 is Rymer, and the other, 2, Norfolk Beefing.—*X. Y. Z.* 1, Beauty of Kent; 2, Dredge's Fame; 3, Broad Eye Pippin.—*Carlton.* 2, Calville St. Sauveur; 3, Hoary Morning; 4, Reinette Granville; 5, Marie Guisse.—*H. H.* Pear Winter Nelis.

Names of Plants: *Knightons.* Tulip Murillo.—*W. H. E., Hants.* 1, Selaginella plumosa; 2, S. cæsia; 3, Salvia gesneræflora; 4, Dendrobium undulatum.—*G. M.* 1, Thuya gigantea (plicata) var. with yellow leaves; 2, Cupressus (next week); 3, Abies concolor; 4, A. grandis.—*J. B.* Alonsoa incisifolia.—*Carlton.* Cupressus sempervirens.—*F. P. D.* Pelargonium echinatum. —*T. H. T.* 1, Cyrtomium falcatum; 2, Asplenium bulbiferum; 3, Selaginella Wildenovi; 4, Sanchezia nobilis.—*J. O.* 1, Polygala Dalmaisiana; 2, Ruellia Portellæ; 3, Maranta argentea; 4, Odontoglossum pulchellum.—*F. E. G., Witney.* 1, not recognised—send in flower; 2, Daphne Mezereum, white variety; 3, Primula verticillata; 4, Begonia Gloire de Sceaux. — *Correspondent.* 1, Cypripedium × Charles Canham; 2, C. villosum, of very good form.—*W. H. W.* 1, Sisyrinchium grandiflorum; 2, probably a form of Adiantum cuneatum, but specimen very imperfect; 3, Asparagus decumbens; 4, Selaginella caulescens; 5, Asplenium bulbiferum.—*J. W.* We cannot undertake to name florists' varieties of flowers.

Oak Post that is Worm-eaten: *F. A. B.* We presume that it is only the sapwood of the Oak post that is worm-eaten. In that case, the soil should be cleared away from the bottom of the post until all the decayed portion has been exposed, and the worm-eaten wood chopped or scraped away. Allow the exposed wood to get thoroughly dry, and then apply hot coal-tar until all cracks and fissures are filled up. The soil can then be filled in round the base of the post. If the post is decayed aboveground, the same treatment would be suitable, but the tar could be applied at once, as the wood below will be dry enough already.

Seed Capsule: *C. S. & Co.* Probably Phormium tenax, the fruits of which are described as being exactly similar to that you have sent us.

Spiræas: *J. E. K.* The plants appear to have rotted off from excess of moisture.

Strawberries: *E. T. C.* The plants have been allowed to get sodden at the root, and when in this condition the leaves were frosted.—*Anxious.* Dip the plants in moderately strong tobacco-water, and syringe them thoroughly with clear water on the following day. Repeat the process if necessary.

Thermometer to Register Frost: *J. B.* Most of the thermometers in use in this country are made to register the Fahrenheit system. In this system water freezes at 32°; therefore if the mercury in your thermometer stands at 31°, there would actually be 1° of frost at the time, and if at 20, there would be 12° of frost. Zero is 32° below freezing-point, when the Fahrenheit thermometer is at 0.

Trapping Crickets: *G. W. B.* These are very elusive insects and difficult to destroy. Smear some phosphorus paste on to pieces of bread, and place these on the stages and round about the plants. Another good plan for trapping these and similar pests is to roll garden mats and place these on the hot-water pipes under the staging. Allow the mats to remain during the night, and in the morning open them, and numbers of the insects will be found hidden in the folds of the mats.

Trenching: *T. T. T.* In the process of trenching a trench is first dug one, two, or more spits in depth and a yard in width, the soil from this opening being taken to where the trenching operations will finish. The base of this empty trench should be loosened to a depth of 6 inches or more. Next the soil of another yard of land is dug, and the soil inverted into this first trench, the top spit being thrown into the bottom of the opening, the second following, and then the third, the soil being thus inverted as well as transposed. This operation is repeated until the whole of the ground is trenched. "Bastard" trenching differs from the foregoing, and may be briefly described as follows:—The first trench is opened one full spit in depth and 2½ feet or a yard in width. Dung is put in and forked into the bottom of the trench, the opening being then filled with the top spits of the second trench, and so on. The advantage of this plan of working is that the good soil is retained at the top—an important consideration on land where the subsoil is of poor quality. The bottom soil is enriched and loosened for the penetration and nourishment of the roots, which, descending deeper, are not so liable to suffer from drought during summer. Strong soil is rendered capable of absorbing more moisture, and yet remain drier at the surface by reason of readily passing to the subsoil. This method of tillage ensures a thorough shifting of the soil. We know of no book which treats exclusively upon trenching, but all the more important of the books on gardening contain articles on the subject.

Ventilating: *M. L.* The use of ventilators at the side of the house on a level with plants is a thing of the past in Orchid-houses. Such ventilators are bad and we advise you not to use them. The top ventilators, if managed in accordance with the condition of the weather outside, will answer your purpose unless there are small bottom ventilators in the sides near to the ground-line.

Wolff Pencil: *J. W. W. and Others.* We gave the name and address of the makers, and presume that the pencils can be had from any garden sundriesman. They should be advertised.

Communications Received.—G. R. S.—Lady G.—Sir A. B. H.—F. C.—E. B. (with thanks)—Mrs. R.—Dr. Treub, Buitenzorg—H. S. (with thanks)—W. W. & Son —C. T. D.—J. S. (the letter has been forwarded)—Dr. Olsson-Seffer, California—R. Greenfield (no charge is made)—G. B.—H. W. W.—Secretary R. H. S.—Secretary Linnean Society—F. J.—W. W.—Geo. West—T. A. Scarlett—W. Simpson—C. D.—Constant Reader—A. P. —G. W.—W. W.—A. D.—O. Thomas—A. B., Queensland.—E. H. J.—A. C. B.—W. A. C.—J. C. T.—Chloris —H. W., Trevince—J. C.—W. R.—W. J. W., Ltd.—B. Berks—J. B.

THE
Gardeners' Chronicle

No. 949.—SATURDAY, March 4, 1905.

CONTENTS.

Arundinaria nobilis ... 139
Books, notices of—
  Journal of the Royal Horticultural Society 137, 138
  The Business Side of Agriculture ... 129
Camellia reticulata ... 139
Colonial correspondence 131
Colonial produce, an exhibition of... ... 137
Cranberries for market supply 139
Cucumber "spot" disease 138
Cultivation, experimental 131
Culture for profit ... 129
Cyclamen Coum ... 133
"Drip," an appliance to prevent 138
Eremurus, the species of 133
Flower-pot, a new ... 131
Forestry 134
Frost, an instrument to foretell 133
Garden City, a 138
Horticulture, examinations in 136
Kew notes 130
Moles, to destroy ... 137
Mushroom bench, an improved 139
Nurseryman, a successful American ... 137
Obituary—
  Bounton, Thomas ... 143
  Epps, James 143
  Hogg, Caroline ... 143
Peaches for early forcing 139
Peach-trees, manures for 139
Phalænopsis at Messrs. Charlesworth's nursery 131
Plants, new or noteworthy—
  Primula cottia ... 130
Potatos 132
Rhododendrons at Singleton Abbey and Penllergaer 136
Rosa gigantea 136
Seeds packed for transit 139
Societies—
  British Gardeners' Association ... 141
  Gardeners' Debating 142
  Manchester Orchid 142
  National Potato ... 142
  Professional Gardeners' Friendly Benefit 141
  Royal Horticultural 140
  Shropshire Horticultural 142
Spring flowers at Fir Grange, Weybridge . 134
Sulphate of iron for Roses 144
Trees and shrubs—
  Erica Veitchii × ... 138
Week's work, the—
  Apiary, the 135
  Flower garden, the 135
  Fruits under glass... 135
  Hardy fruit garden 134
  Kitchen garden, the 135
  Orchid houses, the 134
  Plants under glass... 134
Welbeck Abbey, garden changes at 130
Wild-garden, the ... 138

ILLUSTRATIONS.

Cyclamen Coum, an interesting variety of 133
"Drip" in plant-houses, a simple appliance for preventing 138
Gibson, James, portrait of 130
Himalayan Rhododendron 30 feet in height at Singleton Abbey 137
Pagoscope, the, an instrument that foretells frost... 133
Rosa gigantea, flowers and foliage of (Supplementary Illustration)
View in the Phalænopsis-house at Messrs. Charlesworth's nursery, the 131

CULTURE FOR PROFIT.*

THIS is a book which appeals to those interested in the commercial side of horticulture as well as to agriculturists proper. They will certainly find it very interesting, and we believe they will derive much profit from studying its details and regulating their procedures accordingly. The keynote to the whole volume is struck in the assertion on p. 5, where it is stated to be "universally admitted that agriculture does not pay." Incidentally we may remark that however true this may be of agriculture and of fruit farming, it is not, making allowance for exceptions, equally correct in regard to horticulture. Assuming this to be true, as we believe we have every right to do, we think the author might well have given a little more attention to the methods of horticulture. We know of farmers who, failing to make their business pay, have devoted their attention to market-gardening, flower culture, bulb growing, Mushroom-growing, and fruit cultivation, especially under glass. These are men who have known how to adapt themselves to altered conditions and furnish an interesting illustration of the principle of natural selection. Moreover, they show the farmer the advantages of what is called intensive cultivation. The man of business, as we are told in the introduction to the present volume, endeavours to produce the best article he can, and [important qualification] the one most suited to his customers' requirements. At the same time he tries to make his incomings exceed his expenses by discovering means of cheapening his processes or of increasing his values. These are obvious truisms, but we incline to the belief that the horticulturist is more fully alive to their importance than is the farmer. Of course we are speaking of the rank and file, not of the leaders of the agricultural profession. But we do not wish to enter on any discussion on this subject. We desire simply to give our readers some notion of the subject-matter of this book and of the way in which it is treated.

Speaking in general terms, the author draws a distinction between the cultivator and the merchant. A man may be a careful and a skilled cultivator; but he may be, and often is, unable to dispose of his produce to advantage. He does not get an adequate return for his capital, his knowledge, his skill, his time, and his labour. It is a case of division of labour and of specialisation, and it is hardly to be expected that, under modern conditions, any one man or any one body of men can be equally expert in the raising of produce and in its subsequent disposal.

In the chapter on methods of marketing details are given as to the manners and customs of producers, factors, and distributors which are very interesting even to those readers who are not directly concerned in the sale or purchase of crops. One thing, as usual, comes out prominently—the fatuousness of our system, or rather chaos, of weights and measures. There were, as we learn on p. 41, forty-six different "weighed measures" by which Wheat sales were returned, varying from 52 lb. to 90 lb. per bushel; and a similar diversity obtains in different markets up and down the country in the case of barley and other cereals. The same thing holds good with regard to fruits and vegetables in Covent Garden and other markets.

> "A further complication is caused by the remarkable measures used in selling fruit and vegetables in Covent Garden which producers are expected to adopt. The very names are peculiar, and the number of different varieties is great and perplexing. Thus we learn from an article by Mr. W. W. Glenny, in the *Fruit Growers' Year-Book* for 1897, that 'vegetables may be gathered and loaded direct on the waggon, cart, van, or barrow; may be secured in bundles with bass or rods, tied in bunches with rods, arranged in hands, packed in loads, flaskets, crates, hampers, pads, sieves, half-sieves, quarter-sieves, flats, molleys, prickles, feys, pottles, punnets, 2-cwt. sacks, 1-cwt. sacks, pea-bags, ½-cwt. bags, besides foreign bags of no defined size, and barrels, boxes, trays of innumerable sizes and endless shapes.' Of course, none of these is a legal measure, and in many cases the words are easily recognised as common technical terms, but in other cases they are expected to imply a given weight or number. Thus, according to the same Year-Book, a Seakale punnet measures 8 in. in diameter at the top and 7½ in. at the bottom, being 2 in. deep; while a Radish punnet is 8 in. in diameter and 1 in. deep, if to hold six 'hands,' or 9 in. by 1 in. for twelve 'hands.' A Mushroom punnet is 7 in. by 1 in., while a salading punnet is 5 in. by 2 in. A sieve contains 7 imperial gallons, while a bushel-sieve holds 10½ imperial gallons. After this it is a relief to know that a bushel basket 'ought' to contain an imperial bushel, two-thirds of which is contained in a 'junk.' We next learn that a pottle of Strawberries should hold half a gallon, but never holds more than one quart, and that a 'hand' of Radishes contains from twelve to thirty or more, according to the season. A 'bundle' of Broccoli, Celery, &c., contains 6 to 20 heads, of Seakale 12 to 18 heads, of Rhubarb 20 to 30 stems, according to size, and of Asparagus from 100 to 125. A 'bunch' of Turnips is 12 to 25, of Carrots 15 to 40, of greens 'as many as can be tied together by the roots'! An imperial hundredweight is, of course, 112 lb., but a hundredweight of Kentish Filberts is 100 lb.
>
> Provincial markets are less perplexing, as fruit and vegetables are usually sold by imperial weights. But even here terms are used which are not commonly known. At Sheffield vegetables are sold by the bag; at Nottingham fruit is sold by the pot and by the strike, as well as by imperial weights; while at Glasgow the old-fashioned 'sleek' or West of Scotland bushel is used, though its meaning has been changed so as to connote a weight, varying according to the class of fruit offered.
>
> Truly, the industry of fruit and vegetable growing is a toilsome and perplexing occupation."

The want of system in weights and measures is by no means the only obstacle in the way of the satisfactory disposal of produce. How many there are who can echo Mr. Rider Haggard's statement here quoted—"One of the greatest obstacles with which the little farmer, the small holder, and indeed all agriculturists have to contend is the impossibility of delivering their produce in markets that are eager for it because of the overwhelming difficulties of collection and delivery, and the overwhelming "charges of its transport." Perhaps, says Mr. Haggard, in continuation, "it will not be thought extravagant to say that on the proper organisation of the sale of fruits and vegetables the success of that form of agriculture depends. Some of our readers may remember the means mentioned in these columns by which the producers in Holland and other continental countries have overcome these difficulties, and are consequently able to undersell us in our own markets.

The following extracts will be read with interest:—

> "The sale of Potatos in large quantities is of comparatively recent growth, and the markets which are devoted to that purpose are usually quite new. Potatos, moreover, are a bulky commodity, and do not depend on their appearance for their price so much as other kinds of vegetables and fruit. They are therefore sold in markets near railway stations, often in the stations themselves, and where they are sold in the central market, it is more often than not that a sample only is exhibited, the bulk being consigned either from the farm or the depot. They are usually sold by weight, but in the case of new Potatos they are taken by the acre occasionally, in much the same way as fruit.
>
> With fruit and vegetables of other kinds the case is very different, the utmost importance being attached not only to the fresh, attractive appearance of the individual articles that make up the consignment, but also to the neatness and artistic effect of the way in which they are presented for inspection. For this reason skill and care in packing and growing fruit for market is of the highest importance. A publication of the Board of Agriculture and Fisheries on the subject begins with these words:—
>
> 'Intensive cultivation has been carried in many places to a high pitch of excellence, and British horticulturists pride themselves, justly, upon their skill as producers. Admirable and necessary as the highest cultivation must always be, yet something more is required to ensure complete commercial success, namely, the conveyance of the produce in the best possible style to the market or to the consumer. It is at this point too many fail, and a material proportion of unprofitable sales is mainly attributable to neglect in presenting goods in the most satisfactory manner. Proofs of this defect are evident in every British market, and commonly the produce of the home-grower may be seen in direct contrast with that of his foreign competitors, to the conspicuous disadvantage of the former.'
>
> As a general rule, producers of fruit simply despatch it to the various markets, where it is sold for their account. It has been largely the habit in Kent for proprietors to sell their crops at auctions, but a large number of them are giving that up now, and are marketing their own fruit; instead of selling their fruit to the little dealer, they are distributing it all over the country, and selling it in the various markets.
>
> Let us therefore return to the traders in the market, taking Covent Garden as the best example we can find. A large amount of foreign stuff is sold there as well as English, but the foreign is usually sold by auction, while the English is generally the subject of negotiation by private treaty. This is probably due to the smallness of the market-place, and the necessity for clearing it rapidly in the case of the foreign goods, which are all sent into the market. The English is often only a sample. Of the two kinds of traders there is no doubt that the merchants are the more prosperous. It is customary with them to go down into the country and buy up whole fields of fruit and vegetables, and whole orchards of fruit, and have such quantities consigned to them as they require. Strawberries are often dealt with in this way; Pears, Plums, and Damsons follow when the soft fruit is over, and Apples are purchased after the others are gathered. Some merchants travel round from farm to farm picking up small quantities, and making their profits out of the reduced railway rates they are able to get when they send the whole of their purchases to London.

---

* *The Business Side of Agriculture.* By Arthur G. L. Rogers. (Methuen & Co.) Crown 8vo, pages 159.

Such a system may suit the small farmer, but the large important growers naturally wish to get all the profit on their produce, and in their case the fruit and vegetables are consigned to the salesmen, who dispose of them to the high-class shopkeepers of the West-End, who are able to exact a high price from their customers. The volume of trade that passes through the market in this way, the number of persons who consign their goods to the salesman, as well as the number of persons who flock there to buy, must be taken as a proof that the system works satisfactorily on the whole, and it is indeed unreasonable to suppose that a trade could exist for very long if it did not in the main meet the wants of the producers and consumers. But the complaints that are made about it are many and bitter. Stories are rife which tell of fruit and vegetables consigned to a salesman in considerable quantities with no better return than a shilling or two of profit, and a bill showing how the salesman's commission, the market charges, and the cost of carriage and handling have swallowed up the remainder of the price. Consignors assert that they are unable to make out how the market charges are calculated, while the prices quoted in the daily and trade papers are very different to what they received. The answer given is that, owing to the supplies of fruit from abroad, there is often a scarcity one day and a glut the next; that the changes in the weather have an important effect on the demand for fruit as well as on its keeping qualities; that it is impossible to sell small and irregular consignments as profitably and as easily as large and constant supplies; and, above all, that the inferior packing and insufficient grading of much of the English produce compared with the arrivals from abroad lower the selling price of the home-grown article. As pointed out above, attention has repeatedly been called to this last point, and a most notable example has recently been made public. The Silver-skin Onions consigned from Bedfordshire to the pickling firms in London would not command any sale at all if they were not carefully graded, and yet in spite of the English farmers' skill the Dutch peasants have succeeded in taking part of their business away. 'The organisation of the brining industry in the Netherlands,' says Mr. Crawford, in his Report on the Dutch brined vegetable industry (p. 11), 'has enabled the factories, by collecting their supplies of raw Onions from a large number of growers, and by the use of improved apparatus, to send to this country large consignments of Onions in brine, possessing greater uniformity in size, shape, and colour than it seems possible to obtain by the methods at present adopted at Biggleswade. It is just this uniformity in the bulk which the great pickling firms in this country desire, and for goods possessing it they are prepared to pay a higher price than for produce which is deficient in this respect."

One other quotation of special interest to our readers, and we may leave them to see for themselves what are the remedies proposed in this thoughtful and lucidly-written book:—"Fruit is of so uncertain a nature that a few days' brilliant weather will yield vast quantities of ripe Strawberries or Plums, which the grower cannot store and is obliged to send to market, only to find, perhaps, an unremunerative price. And all the while there are perhaps hundreds of persons [the author might have said thousands] anxious to buy who are quite unaware of the opportunity offered them."

NEW OR NOTEWORTHY PLANTS.

◆

PRIMULA COTTIA, E. WIDMER.[*]

THIS plant has only been known in the horticultural world for a few years. The *Index Kewensis* does not mention it (at least in the first edition), nor does Pax in his *Monographisches Ubersicht des Primula*, published a year before Widmer described it in the *Flora*. It is a plant peculiar to the Cottian Alps, where it is found on the rocks of the Val Germanasco at an elevation of about 3,250 to 8,125 feet. It was sent out by Dr. E. Rostan of Pinerolo at first as P. villosa, Koch, then as P. hirsuta. Closely akin to P. villosa and P. commutata, it differs in habitat from those species which grow in the Eastern Alps, the special home of the genus Primula. P. cottia is saxatile, the leaves oval lanceolate, slightly, rarely sharply acuminate, the petiole 2—8 cent. (¾—2¾ inches), rarely 10 cent. (3 inches) long by 0·8 — 3 cent. (about ⅓ — 1¼ inch) wide, generally rounded at the summit, sometimes pointed, dentated from the centre, teeth large and obtuse; floral raceme longer than the leaves and bearing 2—11 flowers on peduncles 2—7 cm., rarely 9 cm. long; bracts oval, obtuse, half or a quarter the length of the peduncles, the inferior foliaceous but rarely longer than the others; the calyx 3·5—6 mm. with obtuse or pointed division. All the green parts of the plant are pubescent-glabrous; flowers large or very large (last May I saw one 3½ cent. or about 1¼ inch across), very bright rose-carmine passing to violet when faded; tube 3—13 mm. long, well furnished with glandular hairs outside and at the throat; stamens longer than the style; capsule 5—7 mm. long.

This is a beautiful species seen on its mossy, shaded rocks in the Val Germanasco. It grows in abundance in the chinks, and its flowers are lovely against the green and Ferny background. In the Jardin de la Rostania, recently founded in honour of the botanist who discovered and distributed this plant, it does not flower well, as it is not in a sufficiently cool and shady place. We have built a north wall for it and hope that it will now do better. At the Linnæa, on the contrary, the plants sent twelve years ago by Dr. Rostan, and which we put in facing north, have done well, and bear yearly fine and numerous seeds. At the Jardin d'Acclimatation here we cultivate it in pots and raise seed fairly easily, but it grows slowly and flowers less well than in its natural state. The air here is too dry for it; but perhaps in England, where it is damper, it would do better. *Henry Correvon, Floraire, Geneva.*

KEW NOTES.

CYMBIDIUM GRANDIFLORUM, *Griff.* (C. HOOKERIANUM, *Rchb.*)—This very handsome species is now flowering in the Odontoglossum-house. It was introduced from the Sikkim Himalaya by Mr. Lobb, and first flowered in the nursery of Messrs. Veitch at Exeter, in 1866, and was fully described by Reichenbach in the *Gardeners' Chronicle* in January of that year. The Kew specimen has several fine growths, though having but one spike of flowers; this, however, is a very strong one, being nearly 3 feet in length, and has fifteen fine large flowers and buds, a rather singular feature of this spike being the full expansion of the terminal bud before the lower ones show any signs of opening. The sepals and petals are a rich bright green in colour and very fleshy, having a diameter of fully 4 inches from tip to tip of the petals. The large, showy lip is straw-coloured with a yellow margin, round which are large blotches of rich purple. The species thrives exceedingly well in a cool temperature at Kew. If grown in heat, the buds will sometimes drop off the spikes just when they should begin to expand. Figured in the *Botanical Magazine*, t. 5574.

LYCASTE LUCIANIANI ×.

This is an exceedingly pretty and interesting hybrid, flowering in the cool-house. It is from a cross between L. Skinneri and L. lassioglossa, the former being the seed parent. The habit of the plant is that of L. Skinneri, though the flowers are much smaller, their size being nearer those of the pollen parent, as also is the colour of the sepals, which are light-brown. The petals and the lip partake of the character of the seed parent, being prettily marked with small, densely arranged, bright-red spots, except at the tip of petals and the centre of the lip, which parts are white and unspotted.

BRUNFELSIA CALYCINA VAR. MACRANTHA.

This variety is a great improvement on the type, and is probably the most showy and beautiful of all the Brunfelsias. Like the species it forms a well-branched, woody shrub, with dark-green leaves 5 to 7 inches in length, by 2 to 2½ inches broad. The flowers are produced in clusters of from three to six in the axils of the leaves, and remain in a fresh condition for a considerable time. The colour is a pleasing shade of purple; and the diameter of the flower is nearly 3 inches, the corolla lobes being much undulated. Although Brunfelsias are evergreens it frequently happens that they lose most of their leaves when grown in the vicinity of large towns. Under such conditions it is advisable to give them a rest in early spring in an intermediate temperature for about a month or six weeks. They should then have the branches shortened a little, placing them afterwards in a stove temperature and syringing them in bright weather. This method produces a well-branched plant with a profusion of flowers, as may be seen by the plants now flowering in House No. 9. *W. H., Kew, February* 27.

CHANGES AT WELBECK.

IT was with surprise and regret that we heard recently of the coming retirement of Mr. W. Roberts from the position of gardener to the Duke of Portland at Welbeck Abbey, Notts. Mr. Roberts has been a valued correspondent to these pages, and we hope that the exceptional experience he possesses in practical gardening will enable him soon to find another sphere of employment. On the 16th ult., as we announced last week, a successor was appointed in the person of Mr. James Gibson, who has won fame as a cultivator and exhibitor of vegetables. Mr. Gibson was born at Auchans, Dundonald, Ayrshire, on the estate of the Earl of Eglinton, where his father was steward for twenty-five years. He served an apprenticeship in the gardens at Sundrum, near Ayr, and subsequently was foreman in the gardens of Sir James Fergusson, Bart., M.P., &c. Mr. Gibson's experience as head gardener has been gained entirely in England, in the counties of Kent, Surrey, Middlesex, Buckingham, and for a short period only in Sussex. He is a thoroughly good gardener in all branches, and though known most as an exhibitor of vegetables and fruits, has, we believe, an intimate knowledge of landscape gardening.

MR. JAMES GIBSON.
Whose appointment to Welbeck we announced last week.

Mr. Gibson has won many honours at exhibitions, including the Gold Medal of the Royal Horticultural Society, the Veitch Memorial Silver and Bronze Medals, and quite a collection of silver cups and miscellaneous medals. He is a member of the Fruit and Vegetable Committee of the Royal Horticultural Society, and of the National Potato Society's Committee. In 1903 Mr. Gibson was a member of the Committee which was responsible for the Gardeners' Dinner held at the Holborn Restaurant on the opening day of the Chiswick Vegetable Show.

---

[*] *In Beitrag für Kenntniss der rothblühende alpen Primula*, von E. Widmer, Flora (T. 72 [1889], pp. 69—74).

As most of our readers are doubtless aware, Welbeck possesses one of the largest gardens in the United Kingdom. The garden staff includes sixty men, and there are 20 acres of kitchen-garden. We congratulate Mr. Gibson upon his appointment to such an important position. He will take with him to Welbeck on March 7 the best wishes of a large number of friends, by whom he is held in very high esteem.

COLONIAL CORRESPONDENCE.

LANTANAS A PEST IN QUEENSLAND.

In Mr. Nehrling's description of his Florida garden, much was made of the Lantanas. I do not know if there is frost enough in a Florida winter to kill Lantana, but if there is not, then woe to Florida if ever the plant escapes to uncultivated ground!

My house stands in a 10-acre paddock, 5 acres of which do not belong to me, but I had the use of the land for my cattle and horses. Three years' growth of the Lantana on this 5 acres has so covered it that a dog could not get through, and it is 15 feet high. The plant is filling up all the scrubs and forests, which in a few years will be impenetrable. Most birds feed on the fruit of the Lantana, and their droppings spread the pest wherever they go.

All our worst weeds have been introduced to the colony. Mimosa pudica, and three species of Sida (I know only retusa) are dreadful weeds on grass land. I emptied the soil out of two Wardian cases which came from Kew with seedling [Sugar?] canes, watered it carefully, and had a good crop of Furze (Ulex europæus), Nettle (Urtica dioica), Chickweed (Cerastium vulgatum), &c. The Ulex died, but the Nettle made great progress, soon showed flower, and gave proof that it would be a successful colonist; but my view of the matter was not favourable to this, so I swept off the lot. Vervain (Verbena officinalis) is another introduced bad weed, but is mostly seen in what the sugar-planter calls a "fallow," a 5-feet growth of Vervain, &c., which seeds abundantly and is ploughed in for the next crop. *D. Buchanan, Mackay, Queensland.*

PHALÆNOPSIS AT MESSRS. CHARLESWORTH'S.

From a photograph taken recently in the Phalænopsis-house in the Orchid nurseries of Messrs. Charlesworth & Co., Heaton, Bradford, Yorks, we are enabled to give an illustration (fig. 54) of the rich display whence Messrs. Charlesworth selected the batch of splendidly-grown specimens which formed the chief feature in their group exhibited at the Royal Horticultural Society's meeting on February 14, and for which a Silver-gilt Flora Medal was awarded.

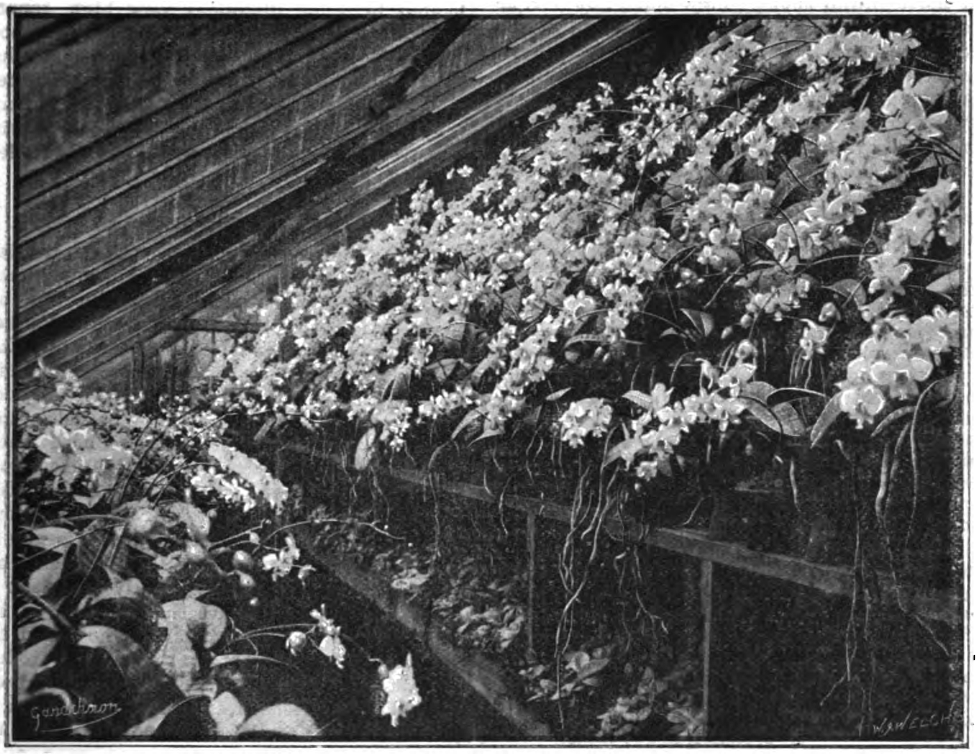


FIG. 54.— PHALÆNOPSIS IN MESSRS. CHARLESWORTH AND CO.'S NURSERY, HEATON, BRADFORD.

Considering the reputed difficulty there is in growing Phalænopsis, it is satisfactory to have to demonstrate such success, and at the same time to show that notwithstanding the great space devoted to hybrids the species are not neglected.

NOVELTIES.

THE TECTUM POT.

Mr. Schwarz sends us photographs of a pot with a loose bottom, and the form is such that the broadest diameter of the pot is below, instead of above, thus accommodating it to the natural tendency of the roots to spread from the centre. Young plants are started in the ordinary way, but afterwards shifted into the "Tectum," with, as is stated, excellent results. The pots may be had from Messrs. Osman & Co., 132, Commercial Street, London, E.

EXPERIMENTAL CULTIVATION.

(*Continued from p. 69.*)

Variety Trials.—No department in experimental work appears at first sight to offer so few difficulties as this, but none in actual practice presents us with so many, if the work is conducted in a scientific manner. Still, it possesses considerable importance, and so much interest attaches to it as well, that such trials should always constitute a part of the operations at any properly organised experimental station. To ensure results of a really useful character, the issues must be narrowed as far as possible, and the closest attention is demanded to secure equality of conditions. The plants submitted to the trials should be from their natural characters and their origin strictly and fairly comparable, the smallest details being fully considered, as some of these have a material bearing upon the subsequent behaviour of the tested plants. The neglect of cultural essentials at the commencement can seldom be rectified afterwards, and perplexing crop results often follow. The preparation of the land, both as to time and weather conditions, should be as uniform as attention and labour can render it; the manuring and the previous year or two's crops should have been identical; and the soil should be free from any marked divergencies, either in chemical composition or physical properties. The land chosen, too, should be level and free from irregularities, both in aspect and altitude. The period for sowing or planting must be selected with the same objects in view, namely equalisation of the conditions for the varieties to be tested.

If these preliminaries are disregarded variety trials are of little value, and imperfect experiments have in this way led to unreasonable condemnation of the whole work. For a considerable time the largest trials of varieties, both of flowers and vegetables, have been conducted by the leading nurserymen and seedsmen in this country and on the continent. It has become a practice amongst inexperienced persons to scoff at these trials as being directed mainly to the exaltation of varieties sent out by each individual firm. That there are defects in the usual systems in seed grounds and elsewhere can be readily admitted, and it would be contrary to human nature to suppose that each firm is not most satisfied when its own products appear to the best advantage. Beyond this I would not go, for a wide acquaintance with and a close examination of the methods adopted by the leading firms have convinced me that the utmost is done to ensure absolute fairness both in the cultivation and the recording of results. If a rival's variety is proved to be superior, the fact is not usually proclaimed to the world, but the fullest advantage is taken of it all the same, so that the public benefit ultimately. This is all one can expect; a firm does not conduct its business for the purpose of advertising the products of rival establishments. But in an official trial the object is to discover the merits of the respective varieties regardless of their owner's interests.

Here, however, another incentive to the greatest care comes into operation. No firm of any standing can afford to stake its reputation upon the transient merits of an unproved novelty. It is entirely in tradesmen's interests to satisfy the public in what they produce; if a novelty prove to be genuine they are substantial gainers, and if it be found to be worthless they are heavier losers than the purchasers. The presumption is, therefore, that before sending out anything as new, or as an improvement upon older sorts, they will submit it to the most rigorous tests which experience has suggested.

Consequently, when an amateur experimenter, possibly of limited practice and imperfect knowledge, takes upon himself the task of comparing varieties, condemning or praising in accordance with a few small trials, he may be doing a grievous wrong in one direction, while his praises may be equally misleading in another.

Work of this kind must be placed upon a broader basis before it will yield reliable results for general application. For many years the Royal Horticultural Society had at their Chiswick garden admirably arranged, efficiently conducted, and carefully recorded trials of fruits, flowers, and vegetables, which it was my privilege to study closely during a considerable period. But as regards many of these, if it had been possible to have tested the same varieties at several different stations at the same time, the results would have been of still more value to the public, as the merits or defects of the varieties would have been clearly demonstrated. If any similar trials are undertaken in the new garden at Wisley, an extension of the old scheme in the way suggested would be desirable.

Now that the Board of Agriculture is giving some attention to horticulture, it would be quite within their power to organise a system for general experimental work (in which variety trials should form a part), either through the county councils or separately. It is, in fact, only by the action of some central or official body that such work will ever be placed upon a proper basis.

Trials may be classed in three groups according to their special objects, namely—

1. To determine the distinctness and merits of varieties generally. This, in most cases, means a large collection of varieties, old and new, for the purpose of determining those which are either too much alike or identical, and of eliminating those that are worthless. It especially requires a repetition in succeeding seasons, and in different soils or situations, to permit the formation of trustworthy conclusions. Such experiments, too, must not be unduly restricted as regards the number of individuals submitted to the comparison. A few plants and small plots give rise to the same mistakes as occur in general experimental work when conclusions are founded upon insufficient evidence.

2. To determine the relative merit of novelties. Comparison must in this case be made with selected standard varieties of well-known characters, and the trials should be extended over several seasons under different weather conditions. The utmost patience is needed, and undue haste will often result in decisions having to be subsequently revised or reversed. It is not uncommon for varieties of some fruits and vegetables to be under trial for five to ten years before they are placed upon the market, either owing to a want of fixity of character, or to a great susceptibility to seasonal influences. Such a prolonged testing is not subsequently demanded, but two or three seasons should be allowed; and perhaps if the weather conditions be very diverse two may suffice.

3. To determine the fitness of varieties for special situations and districts.

Under this head trials can be conducted by county councils and other bodies of an official or independent character that should be of great local value. It is well known to every experienced horticulturist that both vegetables and fruits display strange peculiarities in their adaptability for certain positions or soils. Some are very restricted in their partialities, while others seem to possess a great elasticity of constitution. Extended records dealing with these characteristics are most valuable guides to cultivators, especially when starting in new localities.

There are several other points which demand attention in variety trials, one of importance bearing upon the restriction of the work, and concentration upon a portion of the subject at a time. Thus in either vegetables or fruits where the forms are very numerous, it may prove advantageous to deal with early, maincrop, and late varieties separately. Perhaps in another case productiveness may be the special object to be studied; high quality is also a subject for a trial; and hardiness is a character that can be tested in a similar way. These are only put forward as indications of the scope of experimental trials, and many others will occur to all who start on the work.

Methods of recording the observations of growers are of great importance here as in other departments, and the more uniformly and minutely such notes can be entered and tabulated the more useful will be the results. In determining the respective value of the varieties compared, the first matter is to set out in full what characters are to be considered, and then to adopt a system of awarding points, as in judging at horticultural shows. Care must, however, be taken to fix a sufficiently high standard at the commencement, as subsequent alterations will lead to confusion. The Royal Horticultural Society has adopted a system of this kind in awarding marks to the varieties under trial, but it has always seemed that the degrees of merit are too restricted; in practice I have found that with a lower standard than six points difficulties constantly arise.

A good example of the details required in variety trials is afforded by the forms issued by the National Potato Society to observers who have conducted county trials. In these, entries are required under the following headings:—Soil; previous crop; manure used; cultural operations; distance in inches between rows and between sets; direction of rows; rainfall during growth; spring frosts; name of the variety; numbers of tubers planted; total weight planted; date of planting; habit of plant; description of blossom; appearance of disease; date of lifting; quantity lifted, ware; quantity lifted, seed; gross weight lifted; flavour; general remarks.

With many fruits and vegetables it is desirable to complete the observations by testing the qualities of the varieties when cooked; and in all cases good cultivation should be provided. Starved or stunted products are not required in such comparisons; on the contrary, it is important to ascertain the full capabilities of the varieties without excessive stimulation. *R. Lewis Castle.*

(*To be continued.*)

FORESTRY.

QUERCUS PEDUNCULATA & SESSILIFLORA.

The enclosed table, showing the rate of growth of these two varieties of Oak, may be of interest to readers of the *Gardeners' Chronicle*. The acorn of Q. pedunculata was taken from the large Oak at Panshanger, and that of Q. sessiliflora from a tree at Woburn. The two trees are growing here in sandy loam 200 yards apart. An accurate account of their growth has been kept, which I enclose.

	QUERCUS PEDUNCULATA, sown 1811.		Q. SESSILIFLORA, sown 1840.	
Year.	Circumference at 8 ft.	Circumference at 5 ft.	Circumference at 3 ft.	Circumference at 5 ft.
	ft. in.	ft. in.	ft. in.	ft. in.
1865	7 0	6 7	1 10	1 8
1869	7 3	6 10	2 6	2 4
1871	7 6	7 0½	2 10	2 7½
1872	7 8	7 2	3 0½	2 10
1878	8 3	7 9	4 2	3 11
1883	8 7	8 1	5 0½	4 8½
1885	8 9	8 2	5 3½	5 0
1893	8 11	8 6	5 8	5 4
1900	9 7	9 1	8 0	7 7
1904	9 10	9 2½	8 7½	8 1½

From the above table it appears that the sessile variety is rapidly gaining on the pedunculate. *H. Clinton Baker, Bayfordbury, Herts.*

POTATOS.

SOIL AND QUALITY IN POTATOS.—Interesting evidence of the effects of soil on Potato quality comes from Hackwood Park, Basingstoke. Mr. Bowerman, the gardener, is without doubt one of the most experienced vegetable growers in the kingdom, and in the fine open kitchen-garden at Hackwood Park, with a deep and well fertilised soil on a chalk subsoil, he has an excellent opportunity for growing high-class Potatos, and produces annually some of the finest crops of this vegetable; rarely, moreover, is he troubled with disease. For the past few years he has favoured me with a sample of his favourite maincrop Potato, Up-to-Date, to cook and test its merits. It always cooks superbly, and this season it is as good as ever. He writes with regard to two newer varieties, Northern Star and Evergood, both having in other directions very high reputations, "I have fourteen sacks of these, but both varieties are so bad when cooked that I wish I had never seen them." Yet in some other soils these varieties may be of excellent quality. In any case it would seem that owing to the tubers being less dry or starchy, the stocks should be excellent for seed purposes.

RAISING NEW POTATOS.

With all respect to so eminent a Potato-raiser as is Mr. Findlay, I cannot for one moment accept his dictum that natural cross-fertilisation has never taken place in connection with Potatos. Were that so, how is it that in years past, when many varieties did produce pollen so abundantly that flowers would give it off almost in clouds, and berries set literally by bushels, that seedlings raised from seed so produced would very greatly vary in character? If Tomatos will cross-pollenise freely, why not Potatos, when pollen is abundant? True, with varieties grown to produce huge crops of tubers pollen is now an exceptionally scarce article in Potato flowers; but thirty years ago it was singularly abundant in many varieties. We have the authority of the late Mr. Clarke, of Christchurch, who raised the famous Magnum Bonum, that it was the product of natural cross-fertilisation. The Early Rose, though a free-bloomer, never did set flower or produce berries. But on one occasion Mr. Clarke found a couple of berries on a plant growing near to a breadth of Paterson's Victoria, and he was confident that a natural cross had been effected. He had never made such a cross. Surprised to find berries where otherwise none had been found, he saved them, sowed the seeds, and raised a batch of seedlings, one of which was the famous Magnum Bonum. Such was the account Mr. Clarke made to me in writing many years ago. In any case no clever artificial manipulation has yet produced a variety fraught with greater value to Potato growers than was Magnum Bonum. In these days, when Potato flowers produce so little of pollen that self-fertilisation is of the rarest, naturally there are no clouds of pollen to be wafted in the air from flower to flower, as was the case many years ago. Then with some varieties it was needful, to check the production of berries, to pick off the clusters of bloom before the plants could become exhausted by seed-pod development. Naturally this sparseness of pollen has made intercrossing to secure new varieties almost an art; all the same, new ones do come in bewildering profusion. I read with amused interest Mr. Findlay's account of the elaborate method he adopts in sowing Potato-seed. I have raised myriads of seedlings in my time, and found no more difficulty in doing so than in raising seedling Tomato plants. Pots or pans filled, as usual, with fairly good sandy soil; holes with the point of a finger a quarter of an inch deep, made equidistant all over the soil; a seed placed in each, then just covered over. By that way it was ensured that each little plant had its fair share of elbow-room till strong enough to lift and shift singly into small pots, keeping them near the glass, and shifting into 48's before finally planting-out. *A. D.*

CYCLAMEN COUM.

The round-leaved Cyclamen is one of our most valuable of early spring (one might almost say of winter) flowers, for, together with other members of the genus, such as C. Atkinsii and its hybrids, they may often be seen in flower or in bud in winter. I am led to remark on the beauty and the general value of these plants by reason of a greatly admired exhibit of them at a meeting of the Royal Horticultural Society on Feb. 14. As displayed in the boxes in which they were exhibited, the plants gave an excellent idea of what may be accomplished by a free use of them in the garden. One of the best purposes for which to use them is as a groundwork to such plants as Andromeda floribunda, Kalmia, Ledum, Daphne Cneorum, and similar subjects. The soil usually employed for such shrubs is very suitable for these hardy Cyclamens, which appear to possess a liking for the shelter and the shade thus afforded. At the same time the plants grow well in sandy loam in which old mortar has been mingled. At Painswick, where the late Mr. James Atkins grew these plants so well, the soil is of a heavy loamy character, and probably to facilitate the drainage more than for any other reason, small limestone chippings of the district were freely incorporated with the soil, and in these the plants thrived with great success.

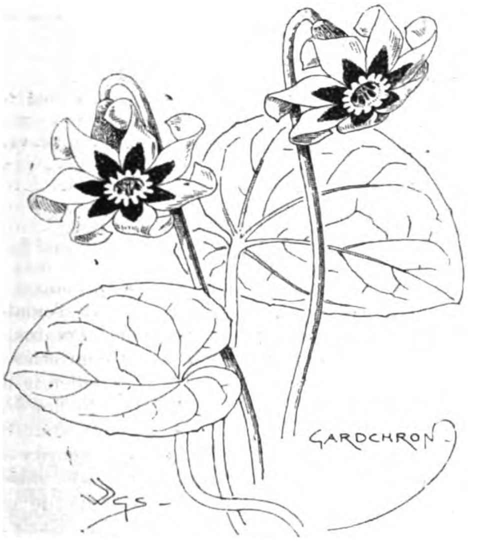


Fig. 55.—Cyclamen Coum var.

As plants for the cold-house in winter, Cyclamen Coum and C. ibericum are very charming. The latter species varies considerably, which variation is seen in the flowers and also in the more or less marbled leaves. C. Coum is a small-leaved plant, the leaves being not more than 1½ inch across, of a dark-green colour with reddish under-surface; cordate, and slightly crenated at the margin. The delicate-looking flowers are developed not more than 3 inches above the plant. The corolla is short, with roundish and blunt segments, of a reddish colour, with crimson staining at the somewhat constricted mouth. A white form of this plant was raised by the late Mr. James Atkins. Mixed groups of these varieties are very pleasing in the early days of the year, when they flower with the Snowdrop, Winter Aconite, &c.

In planting the corms should be buried an inch or more beneath the surface of the ground. Imported corms frequently remain dormant for a whole year, although perfectly sound. In the interesting group already noted, which was exhibited by Messrs. Jackman, of Woking, additional interest was given by a curious development seen in a single plant, and which is illustrated in fig. 55. This was virtually a variety of C. Coum album, but possessed seven segments in place of the normal five. The segments were pointed, acute, and horizontally disposed, giving a star-like appearance to the flower. The segments were heavily marked with deep violet at their bases. All the flowers on the plant were identical, and the segments not reflexing as in the ordinary form, presented a novel and interesting feature. *E. H. Jenkins, Hampton Hill.*

THE SPECIES OF EREMURUS.

(Continued from p. 99.)

E. h. robustus (E. himalaicus × robustus).—A pretty and vigorous hybrid that may be adequately described as having the habit of E. himalaicus, the larger flowers of E. robustus, whilst the colouring is a blend between that of the two parents—a silvery-blush or white "shot" with tints of pink. It is an effective garden plant, but it has the precocious habit of E. robustus in thrusting its flower-spikes too early for their well-being. *E. himrob* × is another name for it. I think, however, there are hybrids between himalaicus and robustus both ways, these differing more in habit than inflorescence from each other.

E. Olgæ (Regel).—A pretty, graceful Eremurus that one too rarely sees in private collections, though introduced long ago. It has a root-system similar to that of E. himalaicus, but the thong-like roots are ruddy-tinted. The leaves are very long and numerous, glaucous, and very tough, forming a loose tangle a yard through when established. The root-stock is more often two to three-crowned than simple, and the spikes attain to a height of 8 to 9 feet, 6 to 7 feet of which is sparsely covered with short pedicelled flowers that are coloured white internally and reddish-pink externally. The petals are rounded and shell-like, showing many tints of silvery-pink on all surfaces, and they remind one of Apple or Peach-blossom. The spikes are much less crowded than in most of the species of Eremurus, and they are extremely graceful and very lasting. It flowers five to six weeks after E. himalaicus and E. robustus, and is generally the last to bloom of the race. I have measured flowering portions of strong spikes that exceeded 7 feet in length, and a mass of imperfectly developed buds at the tips showed that still greater length is possible. It grows splendidly in heavy clay, and one strong specimen has yielded a dozen flowering crowns in four years. The species varies a little in colour range; some are nearly white, others striped with pink externally, the inner surfaces pellucid and slightly flushed pink; others are almost brick-red externally, but never harshly coloured.

E. robustus.—The finest Eremurus so far introduced, and an exceedingly vigorous plant, surpassed in stately magnificence only by its variety Elwesianus. It is a plant one cannot grow too well, for it prefers a deep sandy loam, and appears to resent soils containing any quantity of chalk and lime, such as would grow E. Bungei well. The root-stock has a conical crown (differing in this respect from Elwesianus) set in a depression of the roots, which ascend abruptly as they leave the root-stock, the thongs being rigid and fleshy, and not more than a dozen around each crown. The leaves are deeply channelled, pale green, 2 feet long or more, ascending for half their length, the tips always drooping when fully grown. The flower-spikes are 8 to 10 feet high, stouter than a man's wrist when fully developed, bearing on the upper third a dense array of soft pale pink flowers, 1½ inch across each, the petals of which are broad and rounded, the anthers reddish, and the ovaries orange-tinted. It is a splendid species, succeeding admirably in a shrubbery clearing and other sheltered place, where its growing spikes would receive some protection. The flowering-spikes of E. robustus are among the first to appear, and they grow very quickly when once started; hence it is not improbable that they may suffer from late frosts in the open border. For such open spaces the variety Elwesianus is the better plant—it is later in pushing spikes, and slower in developing its spikes than E. robustus. *G. B. Mallett.*

(To be continued.)

THE PAGOSCOPE.

Under this name M. Bernel-Bourette has introduced an instrument which cannot fail to be of service to cultivators. We take our illustration (fig. 56) from the *Journal de la Société Nationale d'Horticulture de France* for January, 1905, where it is fully described. The object of the instrument is to give timely notice to the cultivator of the approach of frost. The apparatus consists of a dry and of a wet bulb thermometer attached to a plate of zinc, whereon are inscribed certain figures in lines on either side and one in a horizontal or curved line near the top, representing thermometric degrees. There is also a needle, which serves as an index. The plate itself is marked with three bands or stripes of colour, green, yellow, and red, the yellow stripe being relatively narrow.

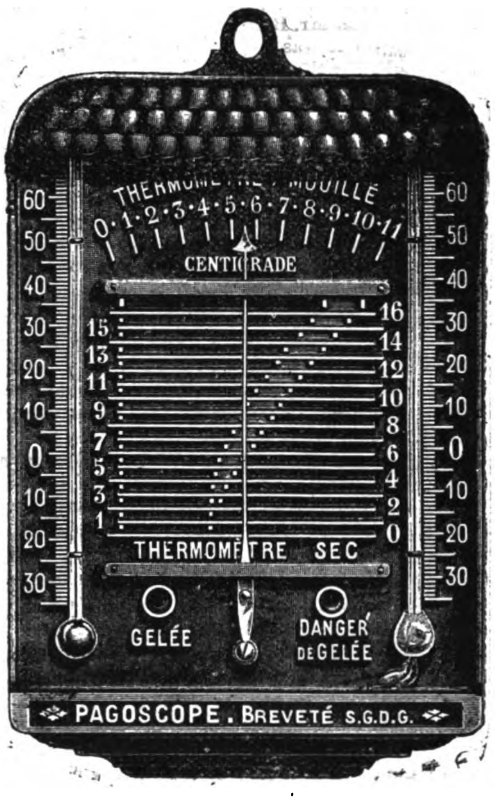


Fig. 56.—Beware of the Frost!

The thermometric scale represented is the Centigrade, but of course a similar arrangement might be adapted to the Fahrenheit scale. When it is desired to use the instrument, the temperature of the wet bulb thermometer on the right-hand side is first of all noted. Let us suppose it is between 5° and 6°, then the index is moved so that its point becomes placed between 5° and 6° on the curved line of figures at the upper part of the plate; then the temperature of the dry bulb thermometer on the left side is read off; let us suppose it is between 7° and 8°. Having ascertained this, the finger tip should be run along the horizontal line corresponding to that temperature till it meets the index or needle. If the point where the horizontal line comes into contact with the index is situated on the portion of the plate coloured green there is no fear of the occurrence of frost; if the junction point is in the yellow band the frost is likely to occur, at any rate it would be prudent to take precautions; lastly, if the point of contact of the horizontal line with the index happens to fall within the red band, frost is absolutely certain to follow. The instrument is patented.

SPRING FLOWERS AT FIR GRANGE, WEYBRIDGE.

W. A. BILNEY, Esq., an active member of the Council of the Royal Horticultural Society, has in a very few years succeeded in making his gardens at Weybridge most varied, beautiful, and interesting. When Mr. Bilney acquired the property a good part of it was still beautified by the Pine-trees peculiar to the district, and his object was to interfere as little as possible with the Pine-wood, but to arrange, with the aid of the existing trees and natural undulation of the sandy soil beneath, a series of pretty gardens connected by seemingly endless walks, and his object has been accomplished in a highly successful manner. It is now a scene of great beauty, the spring flowers being well advanced, and a very great quantity of bloom appearing to keep up the display until the summer flowers come in. Many thousands of bulbs of all kinds have been planted—clumps of the best Pæonies, Irises, and other showy flowering plants, and all have thriven well, despite the sandy nature of the soil, which even now is rather dry beneath the more closely arranged Pine-trees.

Around the commodious dwelling-house a modern garden, with lawn and flowers, is arranged; on one side is a rustic nook surrounded by Rambler Roses running over rustic woodwork. Beneath the windows of the billiard-room a close bank of that most useful of hardy shrubs, Choisya ternata, is arranged, and the lawn in front is studded with innumerable tufts of Crocuses of all colours, which are permanently planted; and from the house and beneath the Pine-trees runs the garden of rockeries, banks, and naturally arranged groups of most of the best hardy plants and shrubs. In the first nook the masses of Crocus Imperati have been in bloom for several weeks, and will last several weeks longer; the hardy species of Cyclamen commenced flowering in January, and are now beautiful objects; and the large clumps of Gentiana acaulis show well for bloom. At another curve is a large mass of Winter Aconite covered with yellow flowers. This seeds of its own accord, and the seedlings are thickly distributed. Beyond, beneath the Pine-trees, is a plantation of Rhododendrons, with banks of Irises beside them, and a small ornamental water for Nymphæas, the rockery around being planted with a complete collection of Saxifrages, some of the earlier of which are in bloom. Then comes a bog-garden with suitable plants, and having Bamboos and other graceful subjects around it. Here, and in several other parts of the garden, clumps of Narcissus minimus are in flower.

Passing through the rock-bordered walk a nook of Hellebores, Snowflakes, Snowdrops, and other spring bulbs are making a fine show, and a small Fern-dell is reached. Beyond is the new Japanese garden, well advanced, and in which it is intended to plant uncommon Japanese plants and shrubs. Quantities of Japanese Lilies are already planted, the uncommon Lilium rubellum being represented by a clump of one hundred bulbs. The continuation of the woodland walk returns to the house again, and is beautiful at many points with the flowers of Scillas, Chionodoxas, Galanthus Elwesii, Hepaticas, Cyclamen Coum, Hamamelis, Primula cashmeriana, and other spring flowers. The whole of the beautiful garden scenes have been carried out on Mr. Bilney's own plans, and his labours have proved a great relaxation to him during an active life.

The walled-in kitchen-garden is in excellent trim; the fruit-trees and general crops are in fine condition. Most things thrive better than would be expected on such sandy soil, though Turnips and some other root-crops are difficult to obtain, and Raspberries refuse to grow or fruit even tolerably.

Under a sheltered wall is the children's garden, managed entirely by themselves. Peaches and Nectarines under glass are in full flower, and in the greenhouse a large batch of Lachenalia tricolor makes a fine show, and the Roses in pots are well set with buds.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Mossing Aërides.—A. Fieldingii, the "Fox-brush" Orchid, has a good constitution, and grows well if suspended from the roof of a Cattleya-house. Once established in a basket, it is not advisable to disturb a plant until the basket has decayed. Associated with this are A. crassifolium and A. crispum, each of which may now have the old sphagnum-moss picked out, and new moss pressed moderately firm in its place. For a month or so after resurfacing any of the plants sprinkle the sides and surface only, but when the roots become active afford water whenever there are signs of dryness. Species which need more heat, shade, and moisture, such as A. affine, A. Lobbii, A. maculosum, A. Lawrenceanum, A. odoratum, A. quinquevulnerum, &c., may be grown in pots. Insert pieces of crock placed upright amongst the roots, and fill in between these with freshly gathered sphagnum-moss. Plants having too much naked stem may be shortened from the base upwards, so as to bring the foliage nearer the pots. The plants should be staged in a position where there is a free circulation of air, and extra care is needed for some time in the matter of watering. Keep the surroundings moist by damping the spaces between the pots, and spraying overhead on all fine days. A. Vandarum, a terete-leaved species, thrives best in a moderately cool house, such for instance as one in which Cypripedium insigne succeeds. In other respects treat the plants in the same way as the other species, except that these should be tied to upright stakes.

Angræcums.—The dwarf-growing species, such as A. citratum, A. bilobum, A. Leonis, A. modestum, A. pallidum, A. Sanderianum, &c., grow best in baskets furnished with a few pieces of crock and a surfacing of moss. Suspend the plants on the shadier side of the East Indian-house, and afford them abundance of water throughout the growing season. A. eburneum and A. sesquipedale being more robust, need pot-culture. For potting these, use a mixture of fern rhizomes, sphagnum-moss, small crocks, and a small proportion of semi-decayed Oak leaves. Place a few pieces of potsherds in the bottom of the pots, and then work in the compost amongst the roots, surfacing the whole with clean, chopped sphagnum-moss alone. Place the plants in a warm house where the shading is not dense, and afford water sparingly, except just when the plants are rooting freely.

Vandas, being of a diversified character, all the species cannot be treated just now, but such as V. insignis, V. Bensoni, V. Denisoniana, V. lamellata, V. Parishii, V. Roxburghii, &c., may have the old moss replaced with new. Suspend them on the shady side of the warm-house, and keep them just moist until they are rooting freely, when copious supplies of water may be afforded them. V. cœrulea is best grown in pots two-thirds filled with drainage and surfaced with sphagnum-moss, which may be renewed now. Place the plants in a light position in a house where an intermediate temperature is maintained, afford ventilation freely, but maintain an abundance of moisture in the air. The sphagnum-moss will not need much water for some time to come; but when the plants are rooting freely, it will be difficult to afford them too much, providing the other conditions are satisfactory. Disease spots may appear on the leaves if there are cold draughts, or if a "stuffy" atmosphere is permitted. To some extent these spots may be arrested by pricking them with a needle or a knife-point.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Primula kewensis ×.—For two months past a batch of these plants has given us a bright display of flowers, but the plants have now ceased to be effective. For winter use there is nothing more serviceable than this Primula if grown well, but otherwise it is of little value. The specimens when arranged in a mass among other flowers are very pleasing, but the flowers, if cut and arranged in glasses, soon drop, and I would not recommend them for this purpose. I have found little difficulty in raising a large number of plants from two I purchased some two years ago for stock; and my method of culture is as follows:—As soon as they have ceased to flower they should be divided (care being taken not to break the young roots during the operation) and repotted. Let the compost consist of good fibrous loam and leaf-soil in equal proportions, one-third of old lime-mortar sifted, and one-third of silver-sand. Very small pots only should be used for the first potting. Place the plants in a warm frame near the light for a few weeks, and provide them with slight shade in bright sunshine. When the weather becomes warmer and roots are forming, remove the plants to cooler quarters, and repot them into slightly larger pots, using similar compost for the second potting. The third and final repotting should be into 5-inch or 6-inch pots at most, and when these pots become full of roots the plants will require feeding with weak manure water. During the summer no place suits them better than in a cool frame directly under a north wall, where they can be shielded from the direct rays of the sun, but derive full benefit from the light. Until the plants become strong the flowers should be removed as they appear.

Lobelia tenuior, figured in the *Gardeners' Chronicle*, Jan. 19, 1901, p. 46, fig. 20, whether grown in baskets or in pots, is extremely valuable during summer and autumn. A pinch of seed should be sown now, and another pinch a little later on to form a successive batch. Sow the seed on a hot-bed, and prick the plants off as soon as they are ready. The seedlings require warmth and moisture, and much light during their season of growth.

Browallia speciosa major.—Insert cuttings or sow seeds of this plant. Pots containing cuttings should be plunged in a mild bottom-heat. Seeds also should be raised under like conditions, and the seedling plants should be grown during the summer on a shelf near to the light in a warm-house.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Raspberry Canes may still be planted. They are gross feeders, necessitating a liberal amount of manure to be worked into the land before planting is done. Suckers make the best plantations and should be planted in preference to dividing old stools. Allow a space of 5 feet between the rows, and 3 feet from plant to plant. Newly-planted canes should be cut down to within 1 foot of the ground soon after planting, reducing this length to almost the ground level when growth has well commenced.

Older Plantations may now have the canes topped, and a good plan is to shorten every alternate cane to within 2 feet of the ground; by this means some very fine fruits are obtained, and the season of ripening is prolonged. I can recommend this practice where the canes are trained to wires. The bundling of five or six canes together is a system practised in some gardens, but in such cases many of the buds fail to grow through being so crowded. It is preferable, if neatness is not a consideration, to shorten the canes to 4 feet high and allow them to fall outwards. Not only will the old canes succeed better, but the young ones also; and this simple plan is followed by market growers. Where heavy mulchings have been applied to Raspberries the material may be lightly forked-in below the surface of the soil, remembering that Raspberries are surface rooters, and it is not good practice therefore to dig deeply amongst them. Of varieties, Superlative is the universal favourite, Baumforth's Seedling and Hornet following as red-fruiting varieties, and Antwerp is an old favourite yellow-fruiting variety, but is now superseded by the newer one, Guinea.

Autumn-fruiting Raspberries cannot always be relied upon for a crop. These should be cut down now close to the ground, thinning out the new growths that will presently come from the base to five of the stoutest. October Red and Belle de Fontenay are the best of this section.

Gooseberries.—In some districts where birds are numerous, the work of pruning has been delayed. This should now be finished as expeditiously as possible, covering the bushes afterwards with fish-netting. Bushes from which the fruit will be picked whilst still green should not be so heavily pruned as those of some of the Lancashire and other dessert varieties. Thin out the centres of the trees, cutting back the side shoots of last year's growth to three or four buds, and the leading growths to half their length. If Gooseberries and Red and White Currants are required for exhibition purposes, cut the shoots hard back, leaving five to six eyes on each shoot close to the main stem. They will then produce unusually fine fruits.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

French Beans. — Sow seeds for successional batches according to the demand. Let five seeds be put in each 8-inch pot, and cover them about 2 inches deep with fairly rich soil. They need a temperature of 60° to 65°. Veitch's Early Favourite is a favourite here, and is followed by Canadian Wonder.

Mushroom - beds.—The same preparation of manure for Mushroom-beds is necessary whether for use indoors or outdoors. The manure must be turned over at intervals of a day or two until sufficient is collected to form the beds, but it should never be allowed to become so hot as to cause dryness. The manure when used should be neither wet nor dry, and it is not well to scrupulously remove all the litter from the manure, for the presence of a little litter will help to keep the manure in a sweet condition. Mushroom-beds indoors may be made from 12 to 16 inches deep, and should be equally firm all over. When the heat begins to decline and does not exceed 80°, the pieces of spawn may be inserted just below the surface at distances of 6 inches apart, breaking each cake into six pieces. Be careful to ascertain that the spawn is fresh. A good position for outdoor beds at this season is one behind a north wall. The size of the beds will be determined by the material at command. A width of 3 feet at the foundation is a convenient size, and the bed may lean against the wall 3 feet high, or stand clear, with equal sides, tapering to about the same height. When it is known that the temperature of the bed will not rise above 80°, apply a covering 2 inches thick with rich loam, making this firm and smooth. Let beds out-of-doors be covered also with litter or straw 18 inches deep.

Parsnips.—We have just sown Parsnip seeds in shallow drills 2 feet apart, the ground having been prepared well previously. No rank manure is near to the surface of the soil, as this would prevent the roots from going straight into the ground. To secure perfect roots for exhibition or other purposes it is necessary to bore holes 2 to 3 feet deep, making them 4 inches wide at the top, and dusting the insides with air-slacked lime, afterwards filling up the holes with well-screened soil from below the potting-bench; but any time during March is sufficiently early for sowing this crop. In many gardens, however, this is the only means by which satisfactory roots can be secured, and if the whole crop be treated in this way the result will compensate for the extra amount of labour involved.

Globe Artichokes.—The finely-screened cinder-ashes used here for protection during severe weather will now be removed little by little until the plants are fully exposed. For the purpose of protection ashes have a neat appearance, and there is very little trouble from slugs or decay. Suckers that were potted in the autumn and have been kept under protection will now be gradually hardened and planted 3 feet apart in rows, and spaces of 4 feet allowed between the rows. Suckers afford the best means of increasing the stock, and "Green Globe" is the best variety.

Seakale.—Root-cuttings from 4 to 6 inches in length have been placed in boxes containing fine soil, and placed in a temperature of 60°. In a fortnight or so, and previously to planting the sets, all the sprouts will be rubbed off excepting one or two, and be eventually reduced to one. If this system is not adopted, cuttings may now be planted, in rows drawn with the line and hoe, 2 inches deep, 2 feet apart, and 12 inches between the plants.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pot Vines which were started into growth in November will now be at the stoning stage, or approaching thereto, when the temperature at night should be reduced to 65°, to be increased to 68° on mild nights. When the berries again commence to swell take advantage of bright sunny days to push forward the crop by closing the house early with sun-heat. Liberal supplies of weak tepid manure-water and occasional sprinklings of Kirk's and Thomson's Vine-manures should be afforded. Allow the laterals to extend a little more at this stage, for if space will allow of this it will improve the size and colour of the fruit. Keep the atmosphere moist by damping the paths and walls in the house, using occasionally for this purpose weak liquid manure. If red-spider makes its appearance, sponge the Vine-leaves at once.

Later Vines.—Let later Vines of Black Hamburgh and other free-setting varieties have a temperature of 65° at night when in flower, and disperse the pollen by gently tapping the roots or by passing the brush over the bunches at mid-day. Thin out the bunches as soon as possible, care being taken not to thin Black Hamburgh severely. Retain six or eight bunches on each Vine, according to the size of the bunches and strength of the Vines. Avoid over-cropping the Vines or the fruit will be sure to lack colour, and the quality will be only second-rate. Pay careful attention to ventilating the house and to the stopping of lateral growths on the Vines, always allowing plenty of room for the principal leaves to develop perfectly.

Cucumbers.—Plants raised from seeds sown as advised in a previous Calendar will now be growing freely, and as the days increase in length more moisture may be given them. Those plants which have been in bearing all the winter may be cleared out as soon as the young plants have become productive. Stop all laterals at the first leaf, and encourage a few early fruits, but do not allow more than one or two fruits to each plant at the commencement, and cut them before they attain to their full size. Afford a top-dressing to the plants when roots appear on the surface of the soil, but avoid over-feeding until the plants come into full bearing, when all superfluous growths should be removed, and the others pinched and tied in when necessary. Afford ventilation when the atmospheric temperature of the house is at 75°, if only for a short time, increasing the amount of ventilation as the temperature rises to 80°. Close the house early in the afternoon with plenty of atmospheric moisture, allowing a further rise to 85° or 90° after closing.

Frame Cucumbers.—Let the materials be got in readiness for these. The bed should consist of two parts leaves and one part of stable litter, well mixed together by frequent turnings before making up the bed. When the bed has been made, form a ridge or place mounds of soil, one to each light generally being enough. Plant out the Cucumber plants as soon as the soil has become warmed through, or at a temperature of 80°, covering up the pits at night with mats. Leave a "chink" of air under each light to allow any excessive steam from the manure to escape.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Herbaceous Border.—To prevent the strong-growing perennial Asters from getting out of bounds, lift the stools at least every second year. Make liberal applications of manure, and replant a portion of the growths taken from the exterior of the clumps. If the early and late-flowering varieties are planted in carefully chosen positions, there will be flowers continuously from July until November. Amongst the taller-growing sorts A. lævis Arcturus, with its black stems, is very distinct and effective. The variety Coombefishacre has a very graceful habit. Dwarf-growing early-flowering sorts are most useful for massing, especially A. acris and A. dracunculoides, growing from 2 to 3 feet high; also A. Nova Belgii "densus," with its compact dense heads of deep blue flowers. Aster Thomsoni, a Himalayan plant, is grand for the front row, being of neat and refined habit, and seldom more than 2 feet high. It has large pale lilac-coloured flowers, and may be increased by seeds or by cuttings of the shoots taken in spring. The roots may not be divided. A. Amellus and its varieties, about 2 feet high, are amongst the showiest, and, like A. Thomsoni, do not require stakes. The remarks on lifting quickly-spreading Asters also apply to Rudbeckia "Golden Glow," Helianthus "Miss Mellish," and other similar plants. When the re-arrangement of the border has been completed, fork-in a good dressing of manure obtained (if possible) from a covered yard.

Herbaceous Phloxes require deep rich soil, and if the stools have been planted two years or more lift them for division and replanting. Discard very old stools and plant clumps of newer varieties from reserve quarter in their places. Dwarf-growing varieties that flower late are valuable.

Anemone japonica and the variety *alba* should be afforded deep soil, and may be increased by division.

Wigandia macrophylla and W. Vigieri.—Sow seeds of these plants in heat, and prick off the seedlings as soon as they can be handled. Pot them on when they are ready for this, using rich soil to encourage strong growth. Seeds of Nicotianas may also be sown.

THE APIARY.

By CHLORIS.

To make Syrup.—Take about 5 lb. of white sugar, either lump or granulated, and place it in three pints of water; boil well so as to get out the air, for air causes sugar to candy. Much has been written about various drugs, which it is claimed will cure or prevent foul brood; but it is to be doubted whether they will accomplish this result, and it will be well to omit them from the syrup, because the bees are never in a hurry to take down such a mixture. Well-fed bees will not leave the hive during bad weather, so we gain in two ways—there is less leakage by death, and breeding proceeds briskly within.

What vessel to use.—Place the warm syrup in a common glass jam-bottle, filling it to the brim; then tie two or three thicknesses of muslin over it. Invert the bottle over the feed-hole and cover up warmly, so as not to allow the heat to escape from the cluster. It will be an advantage to place under the bottle a block of wood about ½ an inch in thickness, with a hole in the centre about 2 inches wide. Some of the books on bee-keeping specially warn us against using any but cane sugar. Personally, I do not think it matters whether the sugar be cane or beet. I have tried both, and can see no difference in the results.

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MAR. 4 { Société Française d'Horticulture de Londres Meeting.

SALES FOR THE WEEK.

MONDAY NEXT—
Herbaceous Plants, Perennials, Azaleas, Roses, Liliums, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.
WEDNESDAY, NEXT—
Palms, Plants, Azaleas, Rhododendrons, Liliums, Roses, Fruit Trees, Border Plants, &c , at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock. —Cases of Lilies from Japan, Azaleas, Roses, &c., at Stevens' Rooms. at 12.30 P.M.
FRIDAY NEXT—
Hardy and Herbaceous Plants, Roses, Azaleas, North American Plants, Liliums, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Imported and Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —41·4°.

ACTUAL TEMPERATURES :—
LONDON.— *Wednesday, March* 1 (6 P.M.): Max. 44°; Min. 35°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 2 (10 A.M.): Bar., 29·9; Temp., 42°. Weather—dull, with occasional sunshine.
PROVINCES.—*Wednesday, March* 1 (6 P.M.): Max. 43°, W. Coast of England; Min. 40°, Scarborough.

Rosa gigantea. *(See Supplementary Illustration.)*

IN 1889 we received from Sir GEORGE KING, then the Director of the Calcutta Botanic Garden, some seeds of this noble Rose, which were distributed among those likely to succeed in its culture. Probably seeds were distributed from other sources also. Mr. GEORGE PAUL informs us that he raised seedlings from this Rose, but that they damped off; and the same fate befell others raised by Mr. LEACH. Some disappointment has been felt at the circumstance that while the Rose grows with the greatest freedom, as at Kew and elsewhere, flowers have only very rarely been produced. Eventually in 1898 Lord BROUGHAM had the satisfaction of flowering the plant in his garden at Cannes. In his "List of Roses now in cultivation at the Château Eléonore at Cannes," published in 1898, his lordship mentions the plant as having flowered in his garden for the first time in Europe last month [April, 1898, presumably]. He gives a photographic representation of it, and describes it as—

"A splendid plant, making growths of 40 feet or more, with rambling branches armed with irregular prickles of moderate size, often in pairs at base of leaves, which are about 3 inches long and glabrous. The flowers are solitary, about 6 inches in diameter—which size will not unlikely be increased when the plant is older and stronger, of a golden-white with yellow centre containing an unusual quantity of pollen. Petals large, broad, imbricated; disc large, styles much exserted, free, villous; stamens long. The most desirable and by far the finest single Rose I have ever seen. It does not seem to be very hardy and is subject to mildew [as it is also here]. The bud is long, larger, but very closely resembles that of Madame Marie Lavallée, and of a pure gold colour. This Rose when in flower should obviously be shaded, as the sun soon extracts the gold from the blooms, leaving behind a substitute of dirty white. At a short distance the flowers bear a close resemblance to a Clematis."

Mr. F. CANT, of Colchester, also succeeded in flowering it, but with such indifferent results that he discarded the Rose as useless for his purposes.

Then came Mr. LEACH, the gardener to the Duke of NORTHUMBERLAND at Albury, Surrey, who succeeded in 1903 in inducing the plant to produce two flowers, the first of which was just on 6 inches across. In February, 1904, the same specimen produced about a dozen flowers, and this year Mr. LEACH had the satisfaction of seeing twenty-eight blooms on his plant, some of which were exhibited at the Royal Horticultural Society on Tuesday last, and secured for the exhibitor the award of a Cultural Commendation and a Botanical Certificate. Mr. LEACH cultivates the plant in a Peach-house, and the shoots are trained down on the wires.

The colour of the flowers exhibited was ivory-white, and the foliage showed one more pair of leaflets to each leaf than is represented in our illustration. A good figure is given in the *Botanical Magazine*, t. 7972 (September, 1904), where the flowers are shown of a pale-primrose-yellow colour, whilst the bud has the golden colour mentioned in Lord BROUGHAM'S description. There is no doubt whatever from the glowing descriptions given by travellers, and such evidence as we now have, that this is indeed a grand Rose and amply deserved the award made to it. In due time we doubt not we shall discover some means of inducing the plant to flower more freely. Up to the present, as Mr. HEMSLEY says, "every possible method of propagation has been tried ineffectually in order to obtain flowers more freely in this country, yet it flowers profusely on the Riviera."

Sir GEORGE WATT was the first to discover this Rose (in Manipur), but the name R. gigantea was first published by the late Sir HENRY COLLETT, who found the plant in the Shan Hills, Upper Burmah. More recently it has been found in South-Western China by Dr. HENRY and others. We may therefore expect considerable variation, whilst the colour of the flowers, about which there has been a diversity of statement, would naturally differ according to varying conditions and diverse stages of growth. Sir GEORGE WATT mentions that the fruit is edible, as large as a small Apple, and that it is sold in the bazaars of Manipur State.

Mr. FITZHERBERT, in our own columns, May 2, 1903, p. 278, mentions the species as hardy in South Devon; and we have heard of it as grown on an outside wall at Reigate, Surrey.

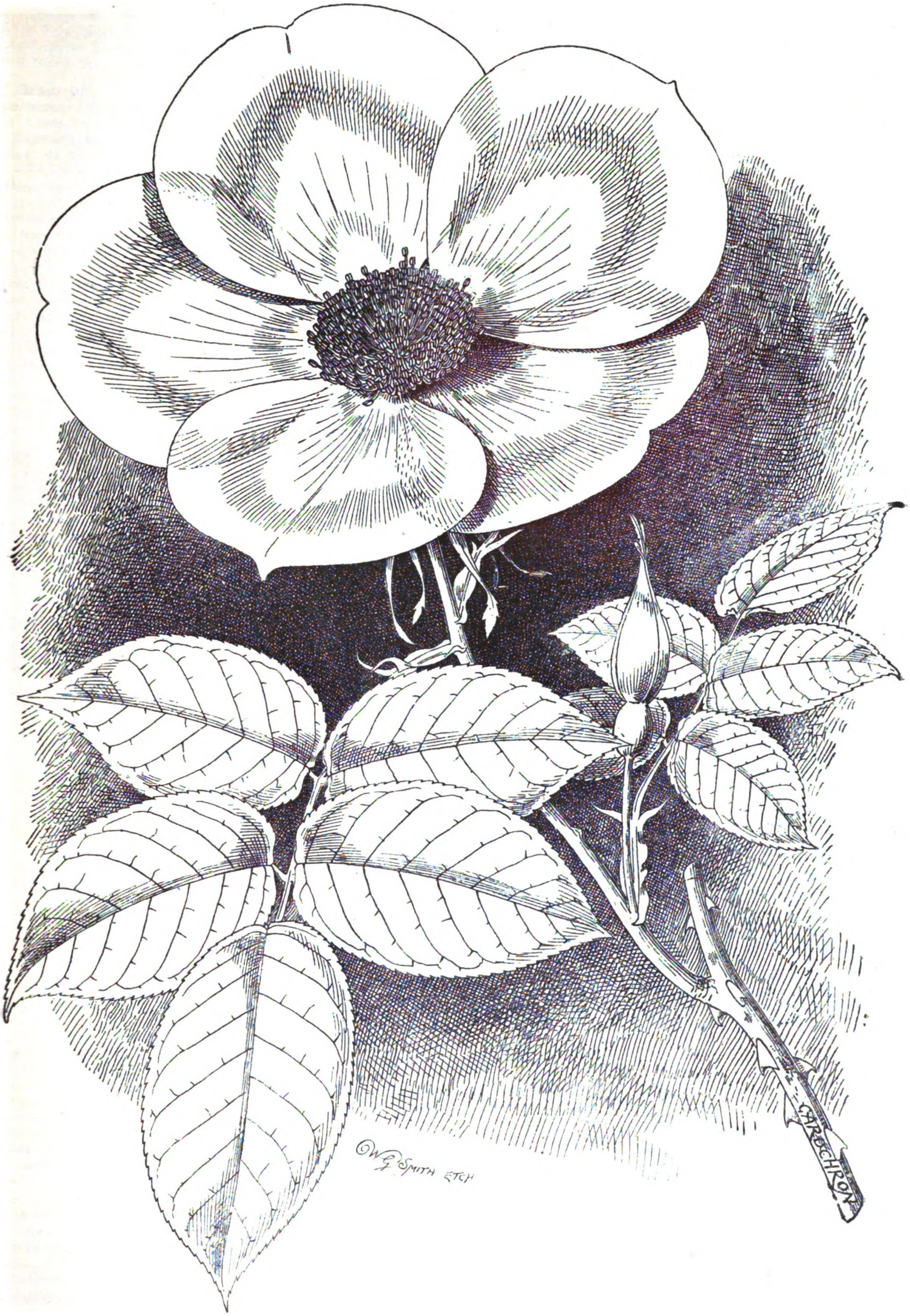
RHODODENDRONS AT SINGLETON, NEAR SWANSEA, AND AT PENLLERGAER.—Some very fine specimens of Himalayan Rhododendrons may be seen in the Singleton Abbey grounds, belonging to Lord SWANSEA. The specimen shown in fig. 57 is a natural hybrid between R. Falconeri and R. niveum, raised from seed sent to Singleton by Colonel SYKES, who commenced his first expedition to the Himalayas in about the year 1848. The tree is 30 feet high, and 20 feet in diameter across the branches. At the time our photograph was taken the plant had 200 heads of flowers, which in size are very similar to those of R. Falconeri, but they are tinged with lilac colour when they first open, passing afterwards to white or nearly white. Mr. JAMES HARRIS, whose photograph appears in the illustration, was gardener at Singleton for many years, and has now a nursery at Blackpill in the immediate neighbourhood. Among the most notable Rhododendrons at Singleton is R. barbatum, 37 feet high and 15 feet through. This tree is wonderful and its effect handsome, even in winter, but when in flower the sight must be one worth a long journey to see. It generally produces about 400 heads of flowers. Of R. Falconeri there is one specimen 28 feet high and 15 feet through, which has produced on one or more occasions as many as 200 heads of flowers. We had the pleasure of visiting Singleton in January, and these marvellous Rhododendrons, so large that their individual characters are well developed, provided us with an unusual treat, the foliage of R. barbatum and other species being so handsome that the absence of flowers was of less consequence than one would have expected. There is also a good Pinetum at Singleton, which contains many fine specimens, including Tsuga Mertensiana (Albertiana), 110 feet high. Lord SWANSEA having resided abroad for the past three years, Singleton is only inhabited by caretakers, but we are glad to find that although little brushing up and such-like work is done in the gardens, the trees are looked after by Mr. HARRIS, who is still retained for this purpose by Lord SWANSEA. The extraordinary climate at Singleton is shown by the fact that we were able to gather beautiful flowers of Grevillea rosmarinifolia on January 14 from a plant growing on the Castle walls exposed to the weather. From Singleton we drove to Penllergaer, the residence of Sir JOHN T. LLEWELYN, Bt. In the beautiful and extensive gardens there Sir JOHN has an exceedingly rich collection of Rhododendrons, including most of the Himalayan species that are hardy in South Wales. The natural undulations at Penllergaer, the immense lake and other features, are remarkable, and the spot is an ideal one for the cultivation of Rhododendrons and Bamboos, which Sir JOHN has made his special favourites. The magnificent Bamboos are a revelation to those who have never seen the effect they are capable of producing in favourable localities, where care is given to the selection of positions in which the plants will have the benefit of shelter. Mr. WARMINGTON, the gardener at Penllergaer, has been at the place so long he has seen most of the rarer plants grow up, and evidently shares the enthusiasm his employer has for their cultivation.

ROYAL HORTICULTURAL SOCIETY'S EXAMINATIONS FOR SCHOOL TEACHERS, 1905.—The Royal Horticultural Society will hold an examination in Cottage and Allotment Gardening on Wednesday, April 5, 1905. This examination is intended for, and will be confined to, Elementary and Technical School Teachers. The general conduct of the examination will be on the same lines as that of the more general examination, except in obvious points to which they would not apply. Intending candidates are requested to send in their names early in March. A Silver-gilt Flora Medal will be awarded to the candidate gaining the highest number of marks, and each candidate will receive a Certificate of the class in which he has passed.

—— GENERAL EXAMINATION.—The Society's Annual Examination in the Principles and Practice of Horticulture will be held on Wednesday, April 12, 1905. A copy of the syllabus, covering both examinations, will be sent to any person on receipt of a stamped and directed envelope. Questions set at the Royal Horticultural Society's Examinations, 1893—1904, may also be obtained at the Society's Offices, Vincent Square, Westminster, price 1*s*. 6*d*.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual general meeting of this Society will be held at the Caledonian Hotel, Adelphi Terrace, Strand, W.C., on Monday, March 13, 1905, at 8 P.M. Mr. W. P. WRIGHT will preside.

Supplement to The Gardeners' Chronicle, March 4, 1905.]



ROSA GIGANTEA: FLOWERS IVORY-WHITE.

Awarded a Botanical Certificate and Cultural Commendation by the Floral Committee of the Royal Horticultural Society on Tuesday last, when flowers were shown from Albury Park Gardens, Guildford. (See pp. 136 and 140.)

EARLY CABBAGES.—Messrs. WEBB & SONS have forwarded to us the following letter from a correspondent:—"I cut and sold some Webb's Emperor Cabbage on February 18. The seed was sown in July, and planted-out in the open field in September. Is this a record? *F. Edgar, Polden Hill Dairy, Chilton Polden, Bridgwater.*"

THE DEAN OF AMERICAN COMMERCIAL HORTICULTURE.—The *Country Gentleman* gives a portrait of GEORGE ELLWANGER, founder of the house of ELLWANGER & BARRY, Rochester, N.Y., now carried on by the sons of the original partners. Mr. ELLWANGER was born December 2, 1816, at Gross-Heppach, Wurtemburg, the son of a Grape-grower; studied horticulture for four years at Stuttgart; emigrated to Rochester in 1835, and four years later bought the nurseries of REYNOLDS & BATEHAM, gradually adding to them until now the Mount Hope establishment covers over 600 acres. The partnership with Mr. BARRY was formed in 1840, and continued until that gentleman's lamented death just fifty years later. In 1846 Mr. ELLWANGER married a daughter of General MICAH BROOKS, one of the pioneers of western New York. Four sons were born of this marriage, who received the advantages of education afforded in the best schools and colleges of this country, and of extended study and travel in Europe.

COLONIAL EXHIBITION AT THE CRYSTAL PALACE.—The Trinidad *Bulletin of Miscellaneous Information* for January mentions that an exhibition of Colonial and Indian produce will be held at the Crystal Palace this summer. The Legislature of Trinidad has voted the sum of £1,500 to be devoted to this purpose, and his Excellency Sir HENRY MOORE JACKSON, K.C.M.G., has appointed a Committee to deal with the matter. Professor CARMODY has been elected chairman and Mr. J. H. HART secretary of the Committee. A space of 1,500 square feet has been applied for. Intending exhibitors should communicate with the Secretary at once.

DESTRUCTION OF MOLES.—Carbon bisulphide is an effectual means of destroying or driving away moles. With a sharp spade cut through the mole-hill, and expose the opening of the shaft of the little animal's mine; pour about an ounce of the bisulphide down the hole, immediately replace the earth, and stamp it down firm. This method has proved effectual in ridding gardens of the presence of moles, and should be effective also in pastures. Of course, care must be taken that no naked light be brought near the bisulphide, even a pipe alight might be sufficient to cause an explosion. I have also found bisulphide useful for destroying wasps in their nests. *J. O. Braithwaite, Chingford, January 20, 1905, in Pharmaceutical Journal.*

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—Three parts in one, dated December, 1904, have just reached us. Naturally the triple part is very bulky, and the contents are so copious and so varied that neither the time nor the space at our disposal is adequate to do it justice. He would be a rapacious Fellow indeed who did not consider that he got the full value of his subscription in the *Journal* alone. We must confine ourselves to the statement that the present part contains many of the papers read before the Society, and even those discussed at the social gatherings of the Horticultural Club. When we say that in the latter category are included a paper by Sir J. LLEWELYN on Rhododendrons, and one by Sir GEORGE WATT on Indian Primulas, we shall give our readers an indication of the value of the publication before us. Dr. COOKE's memoir on Plant Pests, with its illustrations, will, we hope, be issued separately. The analysis of current periodicals, which has been so useful a feature in recent issues, is on this occasion crowded out. The celebration of the Centenary, the opening of the Hall by the KING and QUEEN, and the timely gift of the garden at Wisley, are duly recorded, so that this part will have a special historical value as a record. By some mischance the portrait of ROBERT FORTUNE at p. 222 is given instead of that of DAVID DOUGLAS; and as it would seem from the legend that the mistake was attributable to the *Gardeners' Chronicle*, we are obliged in self-defence to call attention to the error, and also in order that it may be duly corrected. The amount of work entailed on the Secretary in the preparation of this volume can only be rightly estimated by those who have personal experience of like character. The Society owes him a debt of gratitude that is beyond repayment.

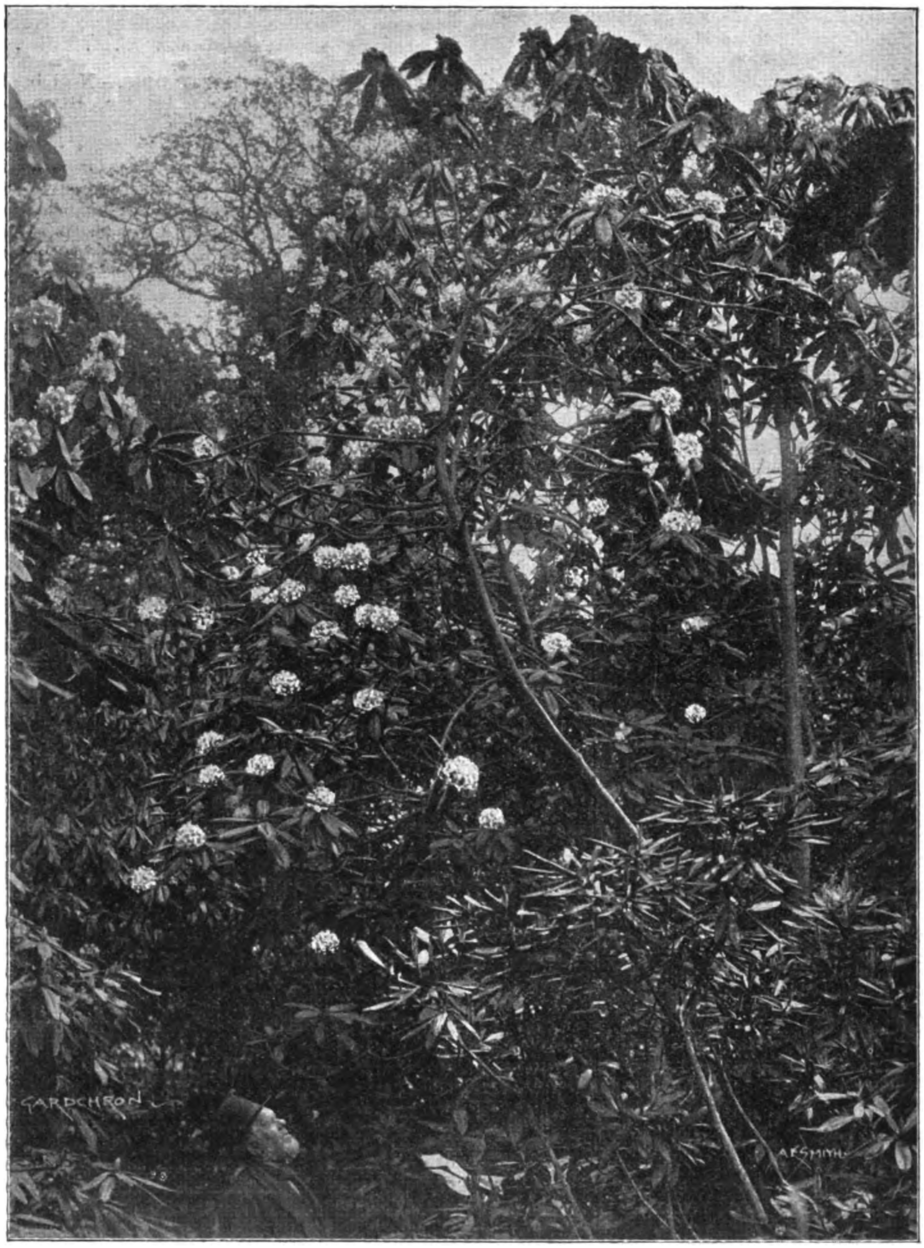


FIG. 57.—RHODODENDRON HYBRID (R. FALCONERI × R. NIVEUM) AT SINGLETON, NEAR SWANSEA.

Height 30 feet; diameter of branches 20 feet. Flowers tinted with lilac at first, but passing to white or nearly white. (See p. 136.)

CHAMBRE SYNDICALE DES HORTICULTEURS BELGES.—In the present year the twenty-fifth anniversary of the foundation of the Chambre Syndicale des Horticulteurs Belges occurs. In connection with the occasion the Society has published a pamphlet descriptive of its vigorous life and good work, especially in the advocacy of the abolition of needless restrictions connected with the phylloxera scare, and in the promotion of free trade in horticulture. This is a pleasant souvenir of the Ghent horticulturists, and the portraits contained in it add to its interest.

THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord Onslow to enquire into and report upon the fruit industry of Great Britain held sittings on the 21st to the 24th inst. The following members were present:—Mr. A. S. T. Griffith-Boscawen, M.P. (Chairman); Col. Long, M.P., Mr. C. W. Radcliffe-Cooke, Mr. Monro, Mr. Hodge, Mr. Vinson, Dr. Somerville, Mr. P. Spencer Pickering, M.A., F.R.S., the Rev. W. Wilks, M.A., and Mr. Ernest Garnsey (Secretary). The Committee had under their consideration the draft report prepared by the Chairman.

"THE GARDEN CITY."—We have received a copy of *The Garden City*, the official organ of the Garden City Association. This company has been formed, as many readers know, "to develop an estate of about 3,800 acres, between Hitchin and Baldock," for industrial and residential purposes, with special reference to sanitary and æsthetic requirements. The magazine deals with matters connected with the Association, is edited by Mr. G. H. NORTHCROFT, and can be obtained from SIMPKIN, MARSHALL & Co., 23, Paternoster Row.

GEO. MONRO, LTD., CONCERT.—The ninth annual Bohemian concert was held at the Queen's Hall, Langham Place, W., on the 23rd ult. Mr. Geo. Monro presided, and was supported by Messrs. Assbee, Joseph Rochford, John Rochford, H. B. May, — Pollard, P. E. Kay, and others. The attendance numbered about 1,700 persons, and a very enjoyable evening was spent. The band of the Grenadier Guards, under the conductorship of Mr. A. Williams, Mus.Bac., was present, and the company was also entertained by Miss Carrie Tubb, Messrs. Chas. Saunders, Phil Ray, Walter Graham, Will Edwards, &c. On referring to a copy of the balance-sheet for last year, we find that the receipts were approximately £180, and donations were given to the following charitable institutions: — Gardeners' Royal Benevolent Institution, £6 6s.; Wholesale Fruit and Potato Trades Benevolent Society, £6 6s.; the Surgical Aid Society, £2 2s; and Charing Cross Hospital, £2 2s. Grants of £1 1s. each were made to the Geo. Monro, Ltd., Pension Fund, and Geo. Monro, Ltd., Outing Fund. In view of the good work thus done, it is gratifying to hear from the Hon. Secretary, Mr. Baker, that it is expected the recent concert will prove to have been a greater success than any of its predecessors.

TREES AND SHRUBS.

◆

ERICA VEITCHII ×.

ON February 14 last Messrs. R. Veitch & Son, of Exeter, exhibited under this name a shrub at the Royal Horticultural Hall in Vincent Square. It did not seem to me to be quite at its best, for only a few of the flowers were open. But knowing the plant as I have done for the past two or three years, I can testify to its great beauty. It has, I believe, been in the Exeter nursery for a good many years, and no doubt originated there. It was sent to Kew a few years ago to be named, and although it was seen to be closely allied to Erica lusitanica (codonodes) and to E. arborea, it could not be identified with either. As it is in several respects intermediate between those two species, the presumption is that it is a hybrid. Both these Heaths have long been cultivated in the Exeter nursery, and the hybridising was no doubt the work of bees or other insects.

Messrs. Veitch presented a plant to Kew, and this has grown and flowered well. Last spring it was in flower for quite three months, and when regarded as an ornamental shrub may be said to have eclipsed both its parents. The flowers are pale pink, and whilst they are intermediate in shape between the cylindrical ones of E. lusitanica, and the shorter rounded ones of E. arborea, they bear a closer similarity to the former. In habit, on the other hand, E. Veitchii follows the latter. It seems, in fact, to have combined to some extent the greater flower beauty of E. lusitanica with the better habit of E. arborea.

In regard to its hardiness it will, I expect, be at least as hardy as its parents. Neither of these has suffered at Kew since the great frost of ten years ago. But my experience is that 20° of frost or thereabouts, whilst not injurious for a single night or so, are fatal to these species if they are of longer continuance. *W. J. Bean.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

WILD GARDEN.—Gunnera manicata requires a damp but sunny and sheltered situation. It thrives in soil containing much decayed vegetable matter and should be afforded rich top-dressings. Spiræa gigantea furnishes a fine effect in July, with flower and stem from 4 to 10 feet high, and it revels in a moist place. Other vigorous and easily-grown plants are Aralia californica, Bocconia cordata, Cephalaria tartarica, Crambe cordifolia, Echinops in variety, Ferulas, Heracleum giganteum, Inula Helenium, Mulgedium giganteum, Polygonums, Rudbeckias, Rodgersia podophylla, Saxifraga peltata, Senecio clivorum. Telekia speciosa, Acanthus, &c. *W. A. Miller.*

APPLIANCE TO PREVENT DRIP.—Noticing the illustrations and remarks by Mr. Brewer on p. 86, I will give a short description of the method I employ here with the same object in view, as I think that in many ways it is an improvement on the side beadings illustrated as being fixed halfway up the principals or rafters. In our case the sash-bars as well as the principals have been treated, and the light false bottom, specimen of which I enclose (see fig. 58), answers admirably, as it catches and carries off all drip, from condensation or otherwise, which may collect at any portion of the bar; and being light in construction and nicely beaded, it adds to rather than detracts from the appearance of a plain sash-bar. Shortly, the contrivance is that a false bottom, beaded on the underside and double-grooved on the top, is fixed to the bottom of the sash-bar, so that the drip on either side the bar has a groove of its own to conduct it to or near the bottom of each bar, where it can drop clear of plants and woodwork and do no harm to anything. Both sash-bars and false bottoms are afforded a coat of paint at the point of junction immediately before the latter are fixed, consequently a water-tight joint is made, and the drip-bars should last for many years in good, condition. *J. C. Tallack, Shipley Gardens, Derbyshire.*

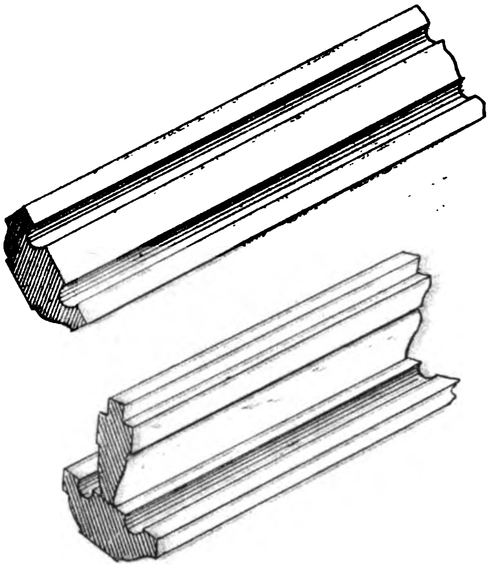


FIG. 58.—ANOTHER APPLIANCE TO PREVENT "DRIP" IN PLANT-HOUSES.

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—In spite of the President's reply to Mr. Elwes' comments at the annual meeting on the issues of the Society's Journal, I think the bulk of the Fellows, unfortunately the quiescent ones, hold with Mr. Elwes that the Journal is unduly large and greatly overdone with matter. So much is this the case that not one Fellow in a thousand can peruse the parts right through, and that neglect to read them which is so common, whilst induced by the exceeding bulk of each issue, is greatly aided by the practice of issuing the books with uncut edges, so that the labour in cutting the leaves is too great for busy people to undertake. What wonder, then, if large numbers of the Journal are put on one side and never looked into. To issue books in that way, however interesting their contents, does not help the Society, nor does it advance horticulture. When the various issues of our fine gardening Press are to hand they are eagerly scanned and read. There is not a wearying excess of matter, it is largely of current procedure, and the paper edges are neatly cut [to the great detriment of the appearance]. No bibliophile asks that these papers be sent out uncut, but in the case of the Journal a few are permitted to dominate the Council, and thus, to the great annoyance of those who would like to read their Journals, the issues, instead of being guillotined, are sent out uncut. The cost of the Journal is also a heavy one. At the annual meeting it was said that only one issue of the Journal took place last year; yet the cost appears in the Expenditure Account as over £1,200, presumably for one issue. If three issues are to come into the accounts for the present year at the same ratio, the cost must be the large sum £3,600. Surely that is far too much to expend on such publications! Two issues yearly are ample, and if of one-half the bulk, so much of the matter being condensed such as busy people could manage to read, the gain all round would be great. *A Fellow.*

APPLE LADY HENNIKER.—Referring to the remarks by "E. M." (see p. 115) on this valuable Apple, I may say that here it was at its best by the middle of November, and by the third week in December it was quite unfit for dessert. The tree here is a standard, and is almost the only tree free from American blight. The soil is a shallow loam resting on mild clay, which is sometimes called soft sand. *F. G. Brewer, Grange Gardens, Brentwood, Essex.*

THE CUCUMBER "SPOT."—Mr. Ward's letter on p. 150 is interesting so far as the theories he advances may be the means of throwing some light on the causes which predispose the plants to an attack of the disease. It is by intelligent and watchful observation of the growth of this plant during the summer by expert and practical growers like Mr. Ward that it is possible to find out the cause of its visitation. Once the cause is found then we may hope with some confidence that a remedy will soon follow. Mr. Ward advances the proposition that the most favourable time for its attack is when the plants have been bearing for nine or ten weeks, and are consequently weakened by the heavy crops they have borne. This is a theory that I think would be endorsed by most practical growers; but unfortunately for theories, be they ever so sound and good, once they come into contact with facts, they often vanish into thin air. [Then they are not theories. ED.] Last summer, visiting a large grower who has been a great sufferer from the ravages of this pest, he assured me that once the fungus had obtained a lodgment in a garden, its subsequent attacks in the following years were considerably earlier each season, irrespective of any apparent condition under which they may be growing. In illustration of this point he showed me some young plants in pots with only three or four leaves on them, and growing in a house well isolated from any other Cucumbers that were suffering from this fatal "spot." After battling against its ravages for two or three years he has been compelled to give up Cucumber cultivation altogether. Mr. Ward further suggests a preventive in the shape of vaporising the Cucumber-houses with sulphur once a fortnight from the end of April until they have done bearing, when he truly says that every particle of leaf and stem growth will be finely and evenly covered with the sulphur deposit. Mr. Ward might have added that so would the flowers of the embryo Cucumber and also the Cucumber itself. This deposit would certainly not help the fertilisation of the flowers, neither would it enhance the selling value of the fruit, so that if the remedy suggested proved effective in preventing an attack the resulting injurious consequences to the crop would more than overbalance any good attained. I agree with Mr. Ward that the directions given by Mr. Geo. Massee for its prevention (which he quotes) appear on the face somewhat fanciful and impracticable, but so have many other scientific researches which have ultimately proved of great value.

One grower I know is carrying out the experiment, the result of which I shall follow with much interest. It seems to me that a subject of so serious import to commercial horticulture in England is well worthy of the serious thought and research of the proposed experimental station at Wisley. *Owen Thomas.*

ARUNDINARIA NOBILIS.—Some time ago you published an article by my friend, Dr. Otto Stapf, of Kew, in which he stated that the plant named by me Arundinaria nobilis is identical with Arundinaria Falconeri. I was abroad at the time, had no means of verifying Dr. Stapf's statements, and, under the attack of so great an authority, could only bow my head meekly and remain silent. I was at Kew last week, and Mr. Bean then showed me the plant from which Dr. Stapf drew his conclusions. It is a plant of Arundinaria Falconeri sent as a gift to Kew under a wrong name, and no more like what Sir Joseph Hooker once called in a letter to me, "your well-named Arundinaria nobilis," than an Elm is like an Oak. *Redesdale.*

CRANBERRIES FOR MARKET SUPPLY.—In reference to "Bramble's" inquiry under the above heading, at p. 126, I may say that I had a bushel or two of surplus Cranberries to dispose of some ten or twelve years ago, and I received a letter from a leading salesman in Covent Garden, with whom I had previous dealings, in reply to one asking if there were a demand for English-grown Cranberries, saying that there was "no sale [for them." However, I see in this day's issue of the *Gardeners' Chronicle* that Cranberries are quoted in the wholesale market list (p. 127) at 13*s.* per box—for American fruit, I suppose. Not knowing the size of the box, one is unable to say whether the price is such as would justify a man in embarking in the cultivation of the Cranberry on a large scale in this country as "Bramble" has intimated his intention of doing, but I should say emphatically, "No." However, if "Bramble" should be the possessor of some acres of low-lying moist bog-land that would not produce anything else profitably, he might plant it with Cranberries this spring and await results. Certainly the initial cost of plants and planting would not be very heavy, and the plants grow and cover the ground quickly when placed in suitable land, the soil being made nice and firm about the individual plants. The gathering of the berries, say in October, is tedious work, but, as a rule, labour is cheap and plentiful in rural districts at that time of the year. The only cultivation required after planting is to keep the ground uniformly moist, pegging down the shoots as they extend their growths in order to keep them close on the surface and thereby induce them to root therein as well as to prevent them being blown about by the wind. No other plants in the shape of Sedge, Heather, &c., should be allowed to grow among the Cranberry plants; they should be pulled up with the hands, not hoed up on any account, as the use of the hoe would be injurious to the surface-rooting trailing shoots of the Cranberry If the plants are set out [in rows?] about [3?] feet apart they will soon cover the intervening spaces. The plant may be propagated by cuttings, layers, and by dividing the roots. The fruit makes excellent tarts and preserves, for which purpose large quantities are bottled annually in the autumn in some private places in this country. Seeing that large quantities of the Cranberry are imported annually from North America there is, after all, a possibility of "Bramble" in the circumstances indicated turning his bog-land to profitable account. *H. W. Ward, Rayleigh.*

SEED-PACKING.—My experience of seed-packing is small in comparison with that of such authorities as Mr. Watson and Messrs. Carter & Co. At the same time I have received seeds from the tropics, collected on the Himalayas of India, the Andes of South America, and some of our West Indian islands, also from well within the Arctic Circle. In each case they were contained in paper packets, afterwards sewn up in calico bags, and they arrived here at various seasons through the post and carried by the steamship companies. In the majority of cases the seeds have germinated successfully. Several varieties of Primula from the Himalayas came up remarkably well. Seeds of Bignonia and allied species lose their vitality more quickly than many on account of the small amount of substance contained in the seeds. Seeds ripened in the tropics have less moisture in them than our own, hence the desirability of thorough maturation and elimination of moisture from seeds sent to those parts from here. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

AN IMPROVED MUSHROOM BENCH.—When calling on Mr. Bannister recently, at Westbury-on-Trym, he showed me his method of supporting his Mushroom beds. Instead of the usual slate or wooden benches in the house, those beds above the floor of the house rested on a wire frame, with a mesh of about 2 inches. With a layer of turf over the wire-work before placing in the manure, he is able, when the beds are in bearing, to pull Mushrooms from the underside as well as from the top of the bed, also from the side near the path in the house. Most gardeners know how Mushrooms will heave themselves through any small space when the spawn "runs," and this arrangement of a wire base facilitates the working through of the Mushrooms, and doubtless increases the yield. *T. H. Slade.*

MANURE FOR PEACH TREES.—Mr. W. H. Clarke stated on p. 119 that trees growing in light or gravelly soils "should be examined, and if the roots are in the least degree dry afford them a soaking with manure water from the farmyard." But if farmyard drainings be applied to roots that are at all dry they are apt to harm the fibres and to excite the growth of the tree too much in spring. Such manure-water is too rich in nitrogen for Peach and Nectarine trees when in a dormant state, and should only be applied after the stoning is completed, and then only if the tree is carrying a full crop of fruit. The trees should then be given a good soaking with clear water, afterwards applying the manure-water. At the same period they may also be given a little chemical fertiliser at alternate waterings. But when the fruits have been gathered no more manure should be given. *A Reader.*

CAMELLIA RETICULATA.—I enclose a flower of this species, which is distinct in appearance of growth and in size to any Camellia grown. The semi-double flowers often attain to 9 inches in diameter; the colour is bright rose, and the numerous stamens add much to their attractive appearance. It flowers very freely when planted in equal parts of loam, peat, and leaf-soil, with a moderate quantity of sand; a little soot is beneficial to the plant. *W. Thorpe, Gardener to J. M. Collett, Esq., Hillfield, Gloucester.*

EARLY PEACHES (see also pp. 55, 91, 106, 129).—Why do early Peach-trees drop their buds? Some gardeners say that it is the result of over-ripening of the wood, and advise shading the trees in the summer after the fruit has been gathered, but sometimes there is the same trouble in the late houses, where it is almost impossible to get the wood ripe enough. My experience leads me to think that bud dropping is caused by insufficient root action. Slow, insufficient root action is brought about in several ways: first, by under-watering; second, by leaving the borders too long without renewing the soil, either or both of which reasons will prevent the trees from making sufficient fibrous roots yearly. Thirdly, by over-watering, which causes the border to become an inert mass of soil, with a temperature that is too low to stimulate the roots into growth. *John Bates, Hanley, Staffs.*

—— I did not mention planted-out trees, for they behave differently to pot trees. We have planted-out trees as well as pot trees, in all some nineteen varieties, but the only ones that fail in pots or otherwise are Alexander, Amsden June, and Hale's Early. With regard to the question of affording plenty of water to the roots of Peach-trees during the autumn and winter months, I think every gardener will admit this is necessary. If Mr. Barks will visit these gardens during those months I think he will agree that our trees are supplied with sufficient water. I have in my possession a copy of a paper read before the Royal Horticultural Society on "Pot Fruit Culture," by the best authority on the subject, and if any of my friends would like to see it I shall be happy to let them have it, and they will see that these particular varieties are condemned for early forcing in pots. *Thos. Tomlinson, Tower House Gardens, Streatham, S.W.*

—— The commonest cause of bud dropping is probably dryness at the roots, and the consequent check at some time or other of nutriment to the buds. A badly drained or imperfectly made border containing subsoil of a cold retentive nature is also sufficient to cause the evil, which may be aggravated by over-watering. Another frequent cause is the manner many fruit-houses are, under compulsion, stocked with Chrysanthemums in the autumn and winter months. Not only are these plants watered with liquid containing strong chemical manures greatly injurious to the trees, but the ventilators are partially closed in hard weather, and fire-heat is employed for the purpose of developing the Chrysanthemum-blooms. In early-forced houses this is a most pernicious habit, for this reason, when the plants are cleared the house is immediately thrown open to all winds and weather, with the idea of giving the Peach-trees a rest. During the time the Chrysanthemums were there the trees or roots became active, and the check occasioned by the lower temperature afterwards, in some cases below freezing-point, retards the development of the buds, which had commenced earlier, and when the house is closed again to start the trees, bud dropping commences. Another cause is the sudden change from the resting to the starting of the house: this should be very gradual, especially when the level of the borders is much below that of the surrounding ground. The tops of the trees must not be excited in advance of the roots. Early Peach borders should be raised somewhat above the ground level. In our anxiety to secure ripened growths the extreme of over-ripeness is another cause of bud dropping, and the same evil is sometimes brought about by red spider. A bad attack by these insects causes the trees to lose their foliage prematurely in the autumn, and the wood becomes exposed to the sun's rays, which so hardens it and so dries the buds that both growth and fruit-buds will fail. Grossness in growth will cause this evil, and insecticides used in excess about the fruit-buds is sufficient to cause them to fall. Some varieties are certainly more prone to bud-dropping than others, but if the trees are in good condition and proper culture is afforded, no difficulty should be experienced in securing a crop. Hale's Early, one of the best early varieties, has perhaps not so vigorous a constitution as some other kinds, and does not succeed well in all districts, but well-ripened fruits are excellent. This season I have increased my stock of this variety. In a house 300 feet long here Alexander and Waterloo have produced excellent fruit, and upon the outside walls I have no complaint against them as bud-droppers. Waterloo is the better of the two, and should be grown in preference to Alexander. Early Louise, Early Beatrice and Early Rivers are growing here on outside walls, the fruits, although naturally small, often weigh 8 to 10 ounces. Fruits of Hale's Early have weighed 14 ounces. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

—— I am surprised that no one has mentioned the frequency of stone-splitting in the variety Alexander. I have seen it in several gardens, and in all cases this has been its chief failure, quite one-third of the fruits ripening prematurely owing to this cause. It is however valuable as an early ripening Peach, owing to its not stopping to "stone," and ripening much early in consequence. *F. G. Brewer, Grange Gardens, Brentwood, Essex.*

—— There are three Peach-houses here, and not a bud has fallen this season. The trees in the first house when in flower were so beautiful that my employer wished to have the trees photographed. All varieties of Peaches and Nectarines, whether early, mid-season, or late-ripening sorts, are liable to drop their buds. The trees should never be allowed to get dry at their roots, whether resting or not. Never allow too dry an atmosphere at any time, but damp the walks, borders, and stages, if there are any, even when the trees are resting. The third, and I believe the worst evil to be guarded against is that of employing too much fire-heat during frosty weather when the trees are resting. Why is heat employed at all when frost is most beneficial to the trees? Sometimes Peach-houses are required for housing plants, but these should be nearly hardy, and only sufficient fire-heat be used to keep out severe frost. The varieties we grow here are Peaches Early Rivers, Dymond, Noblesse, Princess of Wales, Prince of Wales, Barrington, Dr. Hogg, Stirling Castle, Golden Eagle, and Royal George; Nectarines Elruge, Lord Napier, Stanwick Elruge, Newton, Victoria, and Humboldt. *Wm. Fulford, Castle Eden Gardens, Co. Durham.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

FEBRUARY 28.—The display in the Royal Horticultural Hall, Vincent Square, on Tuesday last, was not quite so large or imposing as that made at the previous meeting. Orchids were less numerous on the occasion under notice, but a magnificent exhibit of forced shrubs was made by Messrs. R. & G. CUTHBERT, Southgate, and with other groups of similar plants, also of Cinerarias, Begonias, alpine plants, &c., the space in the Hall was moderately well furnished.

The ORCHID COMMITTEE recommended one First-class Certificate and two Awards of Merit to novelties.

The FLORAL COMMITTEE recommended a Botanical Certificate to Rosa gigantea, and two Awards of Merit to varieties of Lachenalia raised by Mr. F. W. MOORE, Glasnevin Botanical Gardens. The most interesting subject before this Committee was the specimen of Rosa gigantea (see p. 136), which Mr. LEACH has succeeded in flowering a third time at Albury Park Gardens. A Gold Medal was awarded to Messrs. R. & G. CUTHBERT for their group already mentioned, and which owed very much of its effect to the smaller group of Magnolia Lenne in the centre of the display. We are unable to remember an instance when this magnificent Magnolia has been shown in such fine condition, or when the rich purple colour of the flowers was more pronounced.

The only exhibit of importance before the FRUIT AND VEGETABLE COMMITTEE was a collection of Apples from Mr. JNO. WATKINS, Pomona Farm, near Hereford.

In the afternoon a lecture was delivered on "Fruit Growing in British Columbia," by the Agent-General for that Colony.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. C. T. Druery, H. B. May, J. Hudson, Jno. Green, R. Hooper Pearson, Jno. Jennings, J. F. McLeod, C. R. Fielder, Ch. Dixon, Chas. Jeffries, Geo. Gordon, C. E. Pearson, R. C. Notcutt, E. H. Jenkins, M. J. James, Geo. Paul, W. Howe, R. W. Wallace, J. A. Nix, G. Reuthe, H. J. Cuthbert, and E. T. Cook.

Miss EDITH COLE, West Woodhay House, Newbury, Berks, exhibited a pretty species of Aloe under the name A. somaliensis. The plant was in flower in a 6-inch pot, the inflorescence being nearly 2 feet high, and the flowers of brownish-red colour becoming white towards the open end of the tube. The leaves were light green mottled with darker spots, and with purplish spines on the margins.

Lachenalias were shown by Mr. J. T. BENNETT POË, Holmwood, Cheshunt, and Mr. F. W. MOORE, Botanic Gardens, Glasneven, Dublin. Mr. BENNETT-POË contributed splendidly grown plants in pots, and Mr. MOORE sent cut specimens only. All the varieties were seedling sorts raised by Mr. MOORE, and Mr. BENNETT-POË'S gardener has found that these seedling varieties grow with more vigour than the older sorts, as L. Nelsoni.

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, staged an extensive group of greenhouse plants, including well-flowered pot plants of Clematis, Cinerarias, Primula obconica, P. kewensis, Boronias, Eranthemum pulchellum, &c., the whole being interspersed with choice specimen Ferns (Silver Banksian Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, presented a batch of greenhouse plants and forced flowering shrubs. Clematis were a feature, the handsome deep claret-coloured variety named Ville de Lyon being especially prominent. Occupying the centre of the group was a new hybrid perpetual Rose named Cherry Ripe, a name indicative of its colour.

Messrs. H. CANNELL & SONS, Swanley, Kent, set up a semi-circular group of Eupatorium petiolare, the plants being well furnished with heads of fragrant white flowers. Messrs. CANNELL also staged a few Cinerarias, trays containing flowers of their strain of hybrid mammoth Primulas, and cut flowering growths of Pelargonium "Clorinda," which attracted considerable attention. This plant belongs to the sweet-scented-leaved section, and freely produces large trusses of flowers of rich rosy-pink colour. It was raised by Dr. Bonavia (Bronze Flora Medal).

A batch of Roses displayed by Mr. GEO. MOUNT, Canterbury, was much admired. Considering the earliness of the season, the quality of the flowers was good. The varieties exhibited were Mrs. R. C. Sharman Crawford, Mrs. W. J. Grant, and Mrs. John Laing (Silver Banksian Medal).

Messrs. JAMES VEITCH & SONS, King's Road, Chelsea, contributed a miscellaneous collection of plants, including Corylopsis spicata, with its drooping racemes of sulphur-yellow-coloured flowers; the handsome Rhododendron Veitchianum, the showy Camellia reticulata, and well-flowered plants of Atragene (Clematis) austriaca. Messrs. VEITCH again showed Cheiranthus kewensis and Primula kewensis (Silver Banksian Medal).

G. HASLETT, Esq., Woodside House, Wimbledon (gr., Mr. A. Scarlett), staged half-a-dozen plants of Hippeastrums in flower.

An exhibit attracting considerable attention was shown by F. D. GODMAN, Esq., South Lodge, Horsham. This consisted of twenty inflorescences of Rhododendron grande, each inflorescence being accompanied with the large, handsome, farinaceous, obovate leaves. The individual flowers are distinctly campanulate in shape, and of creamy-white colour with a dark base to the cup (Silver Banksian Medal).

Messrs. JOHN LAING & SONS, Forest Hill, London, set up a semi-circular group of pot plants of Begonia semperflorens gigantea carminata. The plants are of tall-growing habit, terminating in the deep scarlet inflorescences that are brought well into prominence against the dark-green foliage (Bronze Banksian Medal).

Messrs. SUTTON & SONS, Reading, filled one of the centre tables with Cinerarias. The plants were of dwarf habit, and carried dense, compact heads of flowers in several pleasing shades of colour. The type is more sturdy than the ordinary florist's strain, and shows indication of the stellata blood. A few plants with reddish flowers were uncommon (Silver-gilt Flora Medal). Messrs. SUTTON also exhibited flowers of a pale yellow-coloured Freesia obtained from crossing a white with a rose-coloured variety. In the new variety the yellow colour was suffused over the whole flower.

Messrs. J. CARTER & CO, 237 and 238, High Holborn, staged a small batch of a dwarf-growing, white-flowered Primula named Carter's Bouquet. The form and size of flower are good.

Mr. RICHARD ANKER, Addison Nursery, Napier Road, Kensington, brought specimens of "Tufa," a substance of volcanic origin, which is eminently suited for constructing rockeries, cascades, wall gardens, &c. A number of pictures illustrating such objects formed with this material was also displayed.

FORCED FLOWERING SHRUBS.

Quite the handsomest group of plants in the Hall was that shown by Messrs. R. & G. CUTHBERT, Southgate Nurseries, Southgate, Middlesex. This exhibit occupied an extensive area on the west side of the building, and consisted of forced shrubs set up in first-class style. Plenty of colour was furnished by such plants as Azaleas, Laburnums, Wistarias, Forsythia suspensa, Staphylea colchica, Magnolias, Ribes, Prunus and Pyrus species, and similar plants that are adaptable for early forcing. Standard-grown plants were worked into the group with good effect, and in the centre was a magnificent batch of Magnolia Lenne, the handsome and richly-coloured flowers of which were remarkably fine. Suitable greenery was furnished by plants of Japanese Maples, small Palms, and various species of Ferns, an edging of the last-named plants forming a suitable finish to the whole (Gold Medal).

Adjoining Messrs. CUTHBERT'S display was a group of similar plants, with the exception of Azaleas, staged by Messrs. CUTBUSH & SON, Highgate, London, N. The group did not present such a display of colour, by reason of the absence of Azaleas, as the foregoing collection, but was meritorious for the variety and interest of its constituents. Wistarias, Lilacs, Magnolias, Staphylea colchica, Spiræa confusa, Pyrus Malus Scheideckeri, &c., with a well-grown batch of Xanthoceras sorbifolia that occupied the centre of the group, furnished the principal features (Silver-gilt Banksian Medal).

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, filled one of the corner sites with a group of forced flowering shrubs, Azaleas, Lilacs, Staphylea colchica, Prunus species, Forsythia suspensa, Laburnum, &c. (Bronze Banksian Medal).

ALPINE PLANTS.

Messrs. THOS. WARE, Ltd., Feltham, Middlesex, presented a group of these plants. The curious-looking Scoliopus Bigelowi, with its Orchid-like foliage, was noticed; also Canarina campanula, Iris fimbriata, Dendromecon rigidum, Corydalis thalictrifolia, and numerous species of Primulas, Saxifragas, Hellebores, Irises, Crocuses, &c. (Silver Flora Medal).

Messrs. CUTBUSH & SON, Highgate, London, N., set up an extensive exhibit of alpine and hardy plants. Among the plants in flower we noted Stylophorum diphyllum, Azalea obtusa, Anemone Pulsatilla alba, Colchicum libanoticum, together with numerous species of Irises, Saxifragas, Hepaticas, Muscari, &c. Messrs. CUTBUSH also exhibited Iris Aschersoni, a new species, with inconspicuous flowers of pale yellow colour prettily veined with purple.

Misses HOPKINS, Mere, Knutsford, exhibited a small collection of alpine plants.

Mr. G. REUTHE, Keston, Kent, staged a collection of alpine plants, including Hepaticas, Crocuses, Saxifragas, Cyclamen Coum, Leucojum, &c. At the background were several species of Rhododendron (Bronze Flora Medal).

Messrs. R. WALLACE & CO., Kilnfield Gardens, Colchester, displayed a number of pots and pans containing alpine plants, Crocuses, Irises, Saxifragas, and Snowdrops. A good type of Primula megaseæfolia named P. m. superba was noticed (Bronze Banksian Medal).

Messrs. GEO. JACKMAN & SON, Woking Nurseries, Surrey, staged a number of alpines, prominent among which was a batch of Shortia galacifolia. Alpine Cyclamen were a feature, and we noticed a white form of the common Celandine, named Ranunculus Ficaria alba.

Messrs. BARR & SONS, King Street, Covent Garden, London, contributed hardy and alpine plants, staging many choice varieties of these interesting subjects (Bronze Flora Medal).

Miss WILLMOTT, Warley Place, Great Warley, showed a batch of Narcissus Bulbocodium var. monophylla. The plants represented forms of this pleasing bulbous flower collected in various localities, and among them much diversity of form was shown. Some of the varieties were greatly superior to others (Bronze Banksian Medal).

AWARDS.

Lachenalia, Brilliant.—The flowers of this variety are of very large size and of rich golden-yellow colour, with the tips of the segments tinted with red. The flower-stems appear to be not more than 6 inches high (Award of Merit).

Lachenalia, Jean Rogers.—This is a very handsome variety of distinct habit, the flower-stems being 13 or 14 inches high. The flowers are less yellow than some other varieties, but before they have become quite open the brilliant red colour of the calyx has a very good effect. Both Lachenalias were shown by Mr. J. T. BENNETT-POË, Holmwood, Cheshunt; and Mr. F. W. MOORE, Botanic Gardens, Glasnevin, Dublin (Award of Merit).

Rosa gigantea (see p. 136 and Supplementary Illustration).—Flowers of this beautiful species were shown by Mr. W. C. Leach, gr. to the Duke of NORTHUMBERLAND, Albury Park, Guildford (Botanical Certificate and Cultural Commendation).

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, H. Little, Francis Wellesley, J. Douglas, R. G. Thwaites, W. Cobb, J. Colman, T. W. Bond, G. F. Moore, H. J. Chapman, N. C. Cookson, H. A. Tracy,

W. H. White, H. G. Morris, A. A. McBean, W. H. Young, W. Boxall, J. W. Odell, R. B. White, J. W. Potter, W. A. Bilney, H. J. Veitch, H. T. Pitt, and H. Ballantine.

There was but a small show of Orchids compared with those at recent meetings. The largest group was staged by Mr. J. CYPHER, Cheltenham, his speciality of fine Dendrobiums being the chief feature. Among those noted were the delicately-tinted Dendrobium nobile Cypheri, D. n. Amesiæ, D. n. Ballianum, D. n. album, and D. n. Purity. The dark-coloured varieties were D. n. nobilius, D. n. Sanderianum (a model flower of a bright magenta-rose tint), and D. n. Statterianum. In the centre was a finely-flowered specimen of the elegant D. barbatulum, and among the hybrids D. × Ainsworthii intertextum, D. × Cybele nobilius, D. × splendidissimum marginatum, D. × Curtisii, &c. The Cypripediums included C. × Sallieri Hyeanum, C. × S. aureum, and a very distinct C. × M. de Curte (Silver Banksian Medal).

Messrs. JAS. VEITCH & SONS staged a group of hybrids, in which were the finely-coloured Cypripedium × Harri-Leeanum, Lælio-Cattleya × Myra, L.-C. × Violetta var. carnea, L.-C. × Antimachus, Lælia × splendens, Phaio-Calanthe × Sedeni alba, and others. The species included a fine specimen of Cypripedium villosum giganteum, Phalænopsis Stuartiana, Lælia flava, and Dendrobium atro-violaceum (Silver Banksian Medal).

Mr. H. J. Chapman, gr. to NORMAN C. COOKSON, Esq., Oakwood, Wylam, was awarded a Silver Flora Medal and Vote of Thanks for a very interesting exhibit of about three dozen beautifully-executed and coloured photographs of some of the leading spotted forms of Odontoglossum crispum, hybrid Cypripediums, Cattleyas, &c. The representations in most cases were of life-size and life-like.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed Dendrobium heterocarpum album, with slender stems of cream-white flowers with yellow and purple disc to the lip; and the pretty D. Wiganiæ nobilius.

N. C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), showed the beautiful Phaius × Clive, which had previously secured an Award of Merit; and Dendrobium × orphanum, with yellow flowers having a claret-purple disc to the lip.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), sent Cypripedium × Colossus Westfield variety, much like an improved C. villosum giganteum; and C. × Allertonense (bellatulum × villosum aureum), with pretty, cream-coloured flowers tinged and densely spotted with purple.

Messrs. SANDER & SONS, St. Albans, showed a small group, in which were a handsome new form of Cypripedium insigne of the Harefield Hall class, but with large purple blotches on the fine white upper part of the dorsal sepal. Also the new, white, rose-tinted Cypripedium × Prince Humbert (Mastersianum × niveum), a very richly-coloured Odontoglossum triumphans latisepalum, a good spotted Odontoglossum crispum, and a hybrid of O. Pescatorei with cream-coloured flowers blotched with purple.

J. S. MOSS, Esq., Wintershill Hall, Bishops Waltham (gr., Mr. Kench), sent a very handsome Odontoglossum Pescatorei with purple-spotted flowers.

Messrs. MCBEAN & SONS, Cooksbridge, showed Cypripedium × Grace Ruby (Dayanum × Godefroyæ leucochilum), with a large cream-coloured flower spotted with purple.

Sir ROBERT MONTCREIFFE, Bart., Bridge of Earn, N.B. (gr., Mr. Common), sent a good white Odontoglossum crispum. R. G. THWAITES, Esq., Chessington, Streatham (gr., Mr. Black), showed Dendrobium × Chessingtonense (aureum × Wiganiæ) with flowers yellow with a purplish disc to the lip. Also D. × Cybele Ballianum. W. D. STAPLEFORD, Esq., Holly Dene, Coalville (gr., Mr. Mount), sent flowers of two hybrid Cypripediums.

The Right Honble. Lord ROTHSCHILD, Tring Park (gr., Mr. Arthur Dye), sent Lælio-Cattleya × luminosa superba and Brasso-Cattleya × Digbyano-Mossiæ. C. J. LUCAS, Esq., Warnham Court (gr., Mr. Duncas), sent a good specimen of Cyrtopodium punctatum with three spikes of flowers.

Mr. H. PARR, Trent Park Gardens, Barnet, showed Dendrobium Wardianum album Trent Park variety.

W. MACDONALD, Esq., Pitlochry, N.B. (gr., Mr. Gilchrist), sent a small form of Cypripedium × Actæus.

Captain G. L. HOLFORD, Westonbirt (gr., Mr. Alexander), showed Cattleya Trianæ Westonbirt variety, a very large form with broadly-ovate petals. Sepals and petals light rose, disc of the lip chrome-yellow, front purplish-crimson.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. H. Ballantine), again showed the beautifully spotted Odontoglossum crispum Veitchianum with a fine spike of thirteen flowers, and the original plant of O. × Wattianum Hardy's variety, with a very strong spike. In both cases the plants were superbly grown.

Mr. GEO. PAUL, The Old Nurseries, Cheshunt, showed several fine forms of Cœlogyne cristata from imported plants. One had two strong spikes to a bulb, and another was pure white with a faint yellow mark on the lip.

Awards.

Lycaste Skinneri alba var. magnifica, from Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr. Mr. W. H. Young), and Messrs. HUGH LOW & Co. —A superb variety, with very large flowers, broad in all parts, the sepals being broadly ovate, pure white with yellow crest to the lip. One of the finest formed Lycastes (First-class Certificate).

Lælia × *Iona nigrescens* (tenebrosa × Dayana), from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins).—A very beautiful and brightly-coloured form, the handsome, velvety, claret-crimson labellum streaked with maroon being the darkest in colour of any in its section. Sepals light-rose veined with rose-purple; petals purplish-rose, with a darker veining (Award of Merit).

Odontoglossum × *loochristyense Tracyanum* (crispum × triumphans).—A noble natural hybrid with large and finely-formed flowers, the white bases of the segments showing O. crispum, and the yellow outer parts and the labellum in its large chestnut-red blotching indicating O. triumphans. The sepals and petals were finely marked with distinct red-brown blotches. A very handsomely-spotted variety, and the best of the imported O. × loochristyense (Award of Merit).

CULTURAL COMMENDATION.

To Mr. H. Alexander, Orchid Grower to Captain G. L. HOLFORD, C.I.E., Westonbirt, for a grand specimen of Ada aurantiaca with forty spikes of bright orange-scarlet flowers, from ten to eighteen on a spike.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq., in the Chair; and Messrs. W. Bates, Jas. Gibson, T. Mortimer, A. Dean, Geo. Kelf, H. J. Wright, H. Parr, F. Q. Lane, Ed. Beckett, Chas. Foster, Geo. Reynolds, J. Jaques, O. Thomas, and W. Poupart.

Mr. JOHN WATKINS, Pomona Farm Nurseries, Withington, Hereford, displayed thirty-five dishes of Apples. The fruit was remarkable for the high colouring obtaining throughout. A variety labelled de Danzig à Côtes was of very pronounced colour. Other varieties deserving of mention are Wareham Russett, Bess Pool (excellent examples), Hoary Morning, Beauty of Kent, and Gascoyne's Scarlet Seedling (Silver Knightian Medal).

The Lecture.

FRUIT-GROWING IN BRITISH COLUMBIA.

A GENERAL MEETING of Fellows was held during the afternoon, at which Sir Albert Rollit, M.P., presided. A number of new Fellows were elected. The Hon. J. H. Turner, Agent-General for British Columbia, gave an interesting paper on fruit-growing in that province. He pointed out that it behoved those interested in fruit-growing in the Mother Country to know more of the conditions affecting that industry in other parts of the Empire. This Colony, he said, was still in its infancy as regards fruit-growing; for it was only a decade ago that the possibilities of the land for agriculture were recognised. Formerly the soil had only been valued on account of its mines and timber. The Colonial Government had lent their assistance in every way. Insect pests were stamped out under competent inspectors backed by legislative enactments, and the introduction of such pests as codlin-moth and woolly-aphis was prevented by a careful examination of all fruit trees and fruit imported into the Colony. Furthermore, the dumping system of the United States, which had flooded the British Columbian markets with surplus crops at any price, so as to keep up the prices at home, was counteracted by an import tax, with such beneficial results that the colonial growers in a very few years were able to grow sufficient fruit not only for all the Colony's own requirements, but also to export some thousands of tons to Manitoba and the North-west Territories. British Columbia was specially adapted for growing Grapes, Melons, Cherries, Plums, Tomatos, Strawberries, and Peaches, in addition to the Apples and Pears which are at present their principal fruit crops. The varieties of Apples principally cultivated are Wealthy, King of Tompkins County, Northern Spy, Cox's Orange Pippin, Baldwin, and Newtown Pippin.

The Government system of "hall-marking" in different grades the cases of fruit exported was also described, under which dealers were satisfied to purchase without opening the cases. Mr. Turner illustrated his remarks by a series of lantern-slides which included pictures of orchards, views of the varying districts at present under fruit-cultivation, typical orchards and homesteads, the methods of packing, and typical trees loaded with luscious fruit.

In moving the usual vote of thanks to the lecturer, Sir Albert Rollit mentioned that he had himself visited many of the places pictured and described, and he recommended the Fellows to do likewise when in search of beautiful spots favourable to fruit and flowers. He stated that an American had once boasted to him of the vast expanse of the Union, bounded on the north by the aurora borealis, and on the other three sides by the ocean, to whom he had replied that the British Empire had no boundaries, but was world-wide.

PROFESSIONAL GARDENERS' FRIENDLY BENEFIT.

THE thirty-eighth Annual Report of the above Society is a record of continued success. The amount of sickness has again been very slight, sixteen members only having drawn from the sick funds during the year, being exactly the same number as in the previous year. The total amount paid out of the Benefit Fund was £61 5*s*. 10*d*., an average per member of 9*s*. 3*d*. The total income for the year amounted to £166 15*s*. 10*d*., and the total expenditure to £75 11*s*. 8*d*., leaving a profit on the year's accounts of £91 4*s*. 2*d*., and making the total funds of the Society £1,290 9*s*. 3*d*. The annual dinner was held at the Green Dragon Hotel, Leeds, on Wednesday, February 8, between forty and fifty being present. The President, Mr. G. Stubbs, occupied the chair, and he was supported by Mr. Haw, the Vice-President, and several honorary members. The Secretary of the Society is Mr. George Carver, 75, Northbrook Street, Chapel-Allerton, Leeds.

BRITISH GARDENERS' ASSOCIATION.

A MEETING of the gardeners of Birmingham and the surrounding district was held in Birmingham on the 13th inst. to consider a proposal to form a local branch of the British Gardeners' Association. About 150 gardeners attended, and they were addressed by Mr. W. Watson, the Secretary of the Association, and by Mr. W. P. Wright, a member of the Committee. On the motion of Mr. J. Udale, Horticultural Instructor for Worcestershire, seconded by Mr. W. H. Morter, head gardener of the Birmingham Public Parks, it was unanimously resolved to at once form a branch, and Mr. W. H. Deadman, of Edgbaston, was elected Secretary *pro tem*. A somewhat lengthy report of the proceedings will be found in the *Birmingham Daily Post* of February 14.

Purley.—A meeting of the Kenley and Coulsdon Horticultural Society, held at the Commemoration Hall, Purley, upon February 15, was addressed by Mr. J. Stocks, as a delegate from the Committee of Selection of the Association, his account of the objects and programme of the Association being very well received.

Altrincham.—At a special meeting of gardeners held at Altrincham on the 16th inst. the formation of a local branch of the Association was agreed upon. A committee was elected to carry on the work of local organisation, with Mr. W. H. Jenkins, Wythenshawe Hall Gardens, Northenden, as Secretary.

At Croydon, under the auspices of the Croydon and District Horticultural Mutual Improvement Society, upon the 21st ult. The proposal, adjourned from a previous meeting, to form a local branch of the British Gardeners' Association, was again brought forward, with the result that it was resolved that a branch should be formed. Mr. W. Rowson, Falkland Park Gardens, South Norwood Hill, was appointed Local Secretary, and all local gardeners interested in the Association are requested to communicate with him.

At Plymouth upon the 25th ult., under the auspices of the West of England Chrysanthemum Society, over a hundred local gardeners being present. The meeting was addressed by Mr. C. H. Curtis as a delegate from the Association. A discussion followed, after which A. J. G. Chalice, Nurseryman, Plympton, moved, and Mr. W. Selley, Delamore Gardens, Cornwood, seconded, "That a branch of the British Gardeners' Association be formed in Plymouth, to be known as the Plymouth and District Branch of the British Gardeners' Association; and this was carried unanimously. Mr. W. S. E. Cholwill, H. G. Lukesland, Ivybridge, was appointed Local Secretary, and all those wishing to join the Association were requested to communicate with him. Over fifty members of the audience responded to the request there and then.

A meeting of the Committee of the Yorkshire Branch of the Association was held at Leeds upon the 25th ult. Among other business it was resolved that the Committee meet monthly, special meetings to be convened by circular, and that a small Sub-Committee be appointed to consider applications for membership. A circular letter drawn up by the Secretary was adopted with slight alterations, and 1,000 copies were ordered to be printed and circulated, together with the Plea, Prospectus, and Form of Application, among gardeners throughout the county.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FEBRUARY 16.—There was a good display of plants at the meeting held on the above date.

Messrs. J. CYPHER & SONS, Cheltenham, staged a good group of plants, consisting principally of Dendrobiums, among which was included a very choice form of D. nobile, called D. n. var. Purity, and that gained an Award of Merit. A Silver Medal was awarded to the group.

A. WARBURTON, Esq., Haslingden, staged a fine group of Odontoglossums, among which were meritorious varieties of O. crispum (Silver Medal).

S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited Cypripedium × aureum var. Œdippe, for which a First-class Certificate was awarded.

M. VUYLSTEKE, Ghent, was given a vote of thanks for a pleasing display of Odontoglossums, consisting principally of hybrids.

E. ROGERSON, Esq., Didsbury (gr., Mr. Blomiley), exhibited Odontoglossum crispum var. Mariæ, which has already been awarded the First-class Certificate of the Society. The same exhibitor showed O. c. var. Edward Roerhers, which the Committee desired to see again.

J. E. WILLIAMSON, Esq., Stretford (gr., Mr. Jones), staged a good group of Dendrobiums, including some meritorious hybrids (Bronze Medal).

Mrs. ARDERN, Stockport (gr., Mr. Morris), exhibited a very distinct form of Odontoglossum × ardentissimum named "Lawrence." The principal feature of this variety is its pale colour. The flower is well shaped, and is heavily blotched on the petals, but the colouring is faint, while the lip is purely that of O. Pescatorei, a variety which it very closely resembles (First-class Certificate).

Messrs. A. J. KEELING & SONS, Bradford, staged a group of Dendrobiums, some of the best varieties being D. × melanodiscus var. Aurora, D. × Luna, D. × Iris, D. × var. floribunda (Vote of Thanks).

JOHN COWAN & CO., Ltd., Gateacre, presented a good group, consisting principally of Cattleyas and Lycastes (Vote of Thanks).

Mr. P. WEATHERS, Old Trafford, exhibited a form of Cattleya Trianæ called "excellens," which was voted an Award of Merit. *P. W.*

SHROPSHIRE HORTICULTURAL.

FEBRUARY 22.—The annual meeting of the above Society was held at Shrewsbury on the above date, the Mayor (Mr. H. J. Hearn) presiding. The annual report was read, from which we extract the following:—

"The success of the opening day at the exhibition held in August last was marred by a continuous downpour of rain, which resulted in a serious falling-off in the receipts as compared with previous first-day receipts. The weather on the second day proving propitious, the receipts at the gates (£2,025 19*s*. 3*d*.) created a record. The number of subscribers for the past year exceeded that of any previous year. The balance-sheet showed that the takings for the summer show were £4,542 10*s*., and the expenditure £4,023 14*s*. 9*d*., giving a profit of £518 15*s*. 3*d*. The total show takings were £4,554 12*s*., and the expenditure (less donations £75 5*s*., and estate account £171 4*s*. 8*d*.) £4,159 18*s*., giving a gross profit of £394 14*s*., and a profit on the actual year's working of £148 4*s*. 4*d*. There was credited to the Society: Balance in bank on deposits £400, ditto current account £413 1*s*., Corporation Bonds £2,500; total, £3,313 1*s*."

A spring show would be held on April 14 in place of the Chrysanthemum show held in the autumn of last year.

It was resolved that the Committee again consider the question of purchasing the Priory property adjoining the Shrewsbury Quarry. The matter is more urgent than it was when the Society discussed it a year ago, because the development of the Priory as a building site was then only talked of, and now plans for the erection of a number of small houses are actually before the Council.

NATIONAL POTATO.

THE National Potato Society, we are informed, continues to make rapid strides. The new members up to February 16, 1905, numbered fifty, with two new affiliated societies. Mr. Walter P. Wright, Postling, Hythe, will forward all particulars post free. A substantial and varied prize list is being arranged for this year's shows.

Messrs. Sutton & Sons have presented 14 lb. of their Superlative Potato to the National Potato Society for its various trial stations.

GARDENERS' DEBATING SOCIETIES.

ADDLESTONE, CHERTSEY, AND OTTERSHAW GARDENERS'.—The monthly meeting of this Association was held at the Red Room, Addlestone, on Tuesday, February 7, the President, H. Cobbett, Esq., occupying the chair. There was a record attendance of members. The lecturer for the evening was Mr. H. J, Jones, of Ryecroft Nurseries, Lewisham, who gave a lecture on "Tuberous Begonias." The lecturer described the cultural details from the time the seed is sown till the plant is fully developed. The plant's adaptability for greenhouse and conservatory decoration, and as a summer bedding plant, were also touched upon, the lecturer advising all who possessed glass structures, however small, to grow these beautiful plants for bedding purposes. *T. S., Addlestone.*

ISLE OF WIGHT HORTICULTURAL.—The monthly meeting of the above Association was held on Saturday, February 11, when Mr. Tee, Hunnyhill, gave a paper on "The Cultivation of Carnations." Dr. Groves, J.P., presided over a good attendance of members. The essayist detailed his mode of treatment from the time of procuring layers or seedlings to the flowering period, and impressed upon his audience the advisability of purchasing strong plants from a reliable source. The chief adjuncts to success in the cultivation of Carnations were a suitable position and a well-drained soil, which should consist of a good fibrous loam. Little, if anything, was needed in the way of manure except an occasional dressing of soot, which not only stimulated the plants but kept down slugs and other pests. Mr. Cane, the Newport Nurseries, exhibited a collection of plants, including Orchids. Mr. Watts, gr. to Mrs. Renwick, Mottistone House, staged an interesting exhibit in two monster Parsnips, each 4 feet 5 inches in length.

KINGSTON GARDENERS'.—At a recent meeting of the above Society, Mr. Alderman, Morden Hall Gardens, gave a paper on "Vines." The lecturer gave details on suitable structures and aspects for Vine cultivation, the principles to observe in making proper borders, the planting of young Vines, and the treatment necessary for newly-planted and for established Vines, the renovation of old rods, manuring, &c. Well-drained borders that were 2 or 3 feet in depth were recommended, a greater depth being deprecated as conducive to cold and stagnant conditions, often the precursors of shanking in the berries. A shallow border, and one that required watering fortnightly, is best suited to the production of healthy growth and well-finished bunches. The paper gave rise to good discussions on the merits of covering outside borders, the cracking of the berries of "Madresfield Court" (said to be overcome by withholding water after July), and the causes of shanking.

—— The attraction of a most effectively illustrated lecture on "Ornamental Trees and Shrubs," by Mr. George Gordon, V.M.H., on the evening of Friday, February 23, led to a large attendance of members. After some preliminary observations respecting trees and shrubs, especially flowering ones, Mr. Gordon took for the text of his remarks the various pictures of a remarkable variety of the subjects named, thrown on to the screen, and thus was enabled to present for the evening features of great interest and beauty. Generally the pictures depicted the various trees and shrubs or portions, and thus conveyed to the members valuable information as to the respective habits and dimensions of the plants described. The now usual collection for the Gardeners' Orphan Fund was made, and 5*s*. 6*d*. gathered. This, with 8*s*. 6*d*. at the first collection and 3*s*. 6*d*. the previous week, makes a total so far of 17*s*. 6*d*. This means promise of a goodly sum before the close of the session. Other societies should do the same. On a request from Mr. W. Watson, of Kew, it was agreed to have a special meeting on the evening of Friday, March 10, for the purpose of hearing an exposition of the objects of the British Gardeners' Association from Mr. Watson, or other representative.

READING AND DISTRICT GARDENERS'.—At the fortnightly meeting of the above Association, under the presidency of Mr. W. J. Townsend, a paper was given on "The Raising of Flowers from Seeds." The lecturer, Mr. T. Neve, of Sindlesham House Gardens, introduced his subject under the following headings:—Soil, Firmness of Soil, Covering the Seed, Watering, Temperature, Light. The flowers chosen to illustrate his remarks were Begonias, Calceolarias, Cannas, Carnations, Cinerarias, Cyclamen, Gloxinias, Petunias, Primulas, Streptocarpus, Verbenas, Canterbury Bells, Pansies, and Polyanthus. Many of the points touched upon gave rise to criticisms, resulting in a good discussion of the subject. Mr. W. J. Townsend, of Sandhurst Lodge Gardens, staged plants of Primula obconica carrying highly-coloured flowers, also plants of Cyclamen and of Hippeastrum. Mr. A. J. Booker, Coley Park Gardens, staged two dishes of Annie Elizabeth Apple.

(*For continuation of these Reports, see p. xviii.*)

MARKETS.

COVENT GARDEN, March 1.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Acacia Drummondi, per doz.	18 0-24 0
Aralia Sieboldi, doz.	4 0- 6 0
Aspidistras, green, per doz. ...	18 0-24 0
— variegated, per doz. ...	30 0-42 0
Azalea indica, p. doz.	15 0 30 0
— mollis, p. doz.	24 0-42 0
Asparagus plumosus nanus, per doz. ...	12 0-18 0
— Sprengeri, doz.	8 0-12 0
— tenuissimus per doz. ...	8 0-10 0
Begonia Gloire de Lorraine, doz.	12 0-18 0
Boronia megastigma, per dozen	12 0-24 0
— heterophylla.	18 0-24 0
Calla æthiopica, per doz. ...	8 0-10 0
Cinerarias, per dozen	6 0-10 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	18 0-30 0
Cyclamen persicum, per doz.	9 0-12 0
Cyperus alternifolius, p. doz.	3 0- 5 0
— laxus, p. doz.	3 0- 4 0
Dracænas, p. doz.	9 0-24 0
Daffodils, Yellow Trumpet, doz.	4 0- 6 0
Ericas, per doz....	15 0-24 0
Euonymus, per dozen	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
— in 32's, p. doz.	9 0-18 0
Ficus elastica, p. doz.	9 0 12 0
— repens, p. doz.	6 0- 9 0
Genistas, per doz.	8 0-10 0
Hyacinths (3 in a pot), per doz.	6 0- 9 0
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Latania borbonica, per doz. ...	9 0 15 0
Marguerites, doz.	6 0-10 0
Primula sinensis, per doz. ...	4 0- 6 0
— obconica, per dozen ...	3 0- 5 0
Solanum capsicastrum, per doz.	6 0- 8 0
Spiræa japonica, per doz. ...	8 0 12 0
Tulips, in boxes, each	1 6- 2 6

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.
Anemones, pink, per dozen bunches ...	2 0- 3 0
— fulgens, per doz. bunches.	3 0- 4 0
Carnations, per doz. bunches.	9 0-12 0
Fern, French, per doz. bunches.	6 0 —
Freesias, p. doz. bunches ...	2 0- 4 0
Lilac, per bunch.	2 6- 3 6
Marguerites, per doz. bunches.	2 0- 3 0
Mimosa (Acacia), per basket ...	6 0- 8 0
Narcissus, per basket... ...	6 0-10 0
Ranunculus, per doz. bunches.	9 0-12 0
Violets, blue, per doz. bunches.	1 0- 2 0
— Parma, per large bunch...	3 6- 4 6

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 9- 1 0
— — medium, each ...	0 4- 0 6
— — short sprays per bunch...	1 0- 2 6
— Sprengeri ...	0 9- 1 6
— tenuissimus..	0 9- 1 0
Adiantum cuneatum, doz. bun.	6 0- 9 0
Croton leaves, doz.	1 0 2 0
Cycas leaves, each	1 0- 1 6
Fern, English, p. dozen bunches	3 0- 4 0
Galax leaves (American), per dozen bunches.	2 6 —
Ivy-leaves, bronze	1 6- 2 0
— long trails, per bundle ...	1 0- 2 0
— short green, per dozen bunches ...	1 0- 1 6
Myrtle, doz. bun.	3 0- 4 0
Smilax, p. dozen trails	4 0- 6 0
Hardy foliage (various), per dozen bunches	3 0- 6 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	3 0- 4 0
— Jerusalem, p. sieve	1 0 —
Asparagus, bunch	6 0- 7 6
— Giant	25 0-30 0
— Paris Green...	4 6- 5 0
— Spanish, bunch	1 7- 1 9
— Sprue, p. doz.	11 0 —
Beans, dwf., p. lb.	1 6 —
— Madeira, per basket... ...	2 0- 3 0
Beetroot, bushel	1 6 —
Broccoli, Sprouting, bag	1 6- 2 0
Brussels-Sprouts, sieve	1 0- 1 6
Cabbages, p. bag	1 6- 2 0
Carrots, 12 bunch.	2 0 —
— bag	2 0- 3 6
Cauliflowers, doz.	1 9- 2 0
— Cherbourg dz.	1 0 —
— St. Malo, doz.	1 0- 2 0
Celeriac, per doz.	2 0- 3 0
Celery, per dozen bunches... ...	6 0-12 0
Cress, doz. pun.	0 9 —
Cucumbers, doz.	4 0- 8 0
Curled Kale, bush.	1 0 —
Endive, per doz.	2 6 —
Garlic, per lb. ...	0 3- 0 4
Greens, bushel ...	1 0- 1 6
Horseradish, foreign, p. bunch	0 8 —
Mint, per dozen...	3 0- 6 0
Leeks, doz. bndls.	1 6 2 0
Lettuces, Cabbage, per dozen ...	1 0- 1 3
Mushrooms (house) per lb.... ...	0 10-1 0
Onions, pickling, per sieve ...	5 0- 6 0
— English, cwt.	15 0 —
— Dutch, p. bag.	12 0 —
— Valencia, case	14 0 —
Parsley, per doz. bunches ...	1 6- 2 0
Parsnips, per bag	2 9- 3 0
Peas, French, pkt.	0 7 —
Potatos, per ton	50 0-90 0
— Frame, lb. ...	0 4- 0 6
— Jersey, lb. ...	0 4- 0 5
— Teneriffe, cwt.	10 0-14 0
Radishes, p. doz. bunches ...	0 8 -2 0
Rhubarb, York, per dozen ...	1 0- 1 2
Salad, small punnets, per doz	0 9 —
Savoys, per tally	4 0- 6 0
Seakale, per doz.	10 0-14 0
Shallots, p. sieve	5 0 —
Spinach, bush. ..	2 6 —
Tomatos, per case	10 0-14 0
— English, p. lb.	1 6 —
Turnips per doz.	1 6 —
— per bag ...	1 6- 2 0
Turnip-tops, bag	1 6 2 0
Watercress, per doz. bunches.	0 6 0 8

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per doz. bun..	3 0- 4 0
— mollis, per dz. bunches	9 0-12 0
Bouvardias, per doz. bun.	6 0- 9 0
Calla æthiopica, per doz. blooms	3 0- 4 0
Camellias, per dz. blooms	1 6- 2 0
Carnations, best American vars., per dz. blooms	3 6- 6 0
— smaller blooms, per doz. bun..	18 0-30 0
Cattleya labiata, per doz. blooms	10 0-12 0
Cypripedium insigne, per doz. blooms	2 6- 3 6
Daffodils, single yellow, per dz. bunches	3 0- 6 0
— double, per dz. bunches	3 0- 5 0
— Emperor	6 0- 8 0
— Golden Spur, per doz. bun.	6 0- 8 0
— Henry Irving, per doz. bun.	5 0- 6 0
— princeps, per doz. bunches.	5 0- 0
— Sir Watkin, per doz. bun.	4 0- 6 0
Dendrobium nobile, per dozen blooms	2 6- 3 0
Eucharis grandiflora, per dozen blooms	2 0- 3 0
Euphorbia jacquiniæflora, bunch	1 6- 2 6
Gardenias, per dz. blooms	4 0· 6 0
Hyacinths, Roman, per doz. bun.	6 0- 8 0
Lilac (English forced), per bun.	3 0- 4 0
Lilium lancifolium rubrum and album, per bunch	2 0- 3 0

	s.d. s.d.
Lilium longiflorum, bunch	8 0- 9 0
-- tigrinum, bun.	2 0- 2 6
Lily of the Valley, per dozen bun..	8 0-18 0
Marguerites, white, per dozen bun.	3 0- 4 0
— yellow, per dz. bunches	3 0- 5 0
Narcissus gloriosus, per doz. bun..	1 6- 2 6
— paper-white, per doz. bun.	1 6- 2 6
— Pheasant's Eye, per doz. bunches	2 0- 3 0
— Soleil d'Or, per doz. bun.	1 6- 2 0
Odontoglossum crispum, pr. dz. blooms	2 0- 3 0
Pelargoniums	
— (Zonal) double scarlet, per doz. bunches.	4 0- 8 0
— salmon and pink, per doz. bunches	6 0- 8 0
Roses, Niphetos, pr. dz. blooms	2 0- 4 0
— Bridesmaid, pr. dz. blooms	4 0- 6 0
— Kaiserin A. Victoria, per dozen blooms	6 0- 9 0
— General Jacqueminot, per dozen blooms	3 0- 5 0
— C. Mermet, pr. dozen blooms	4 0- 6 0
— Sunrise, per dozen blooms	3 0- 4 0
Tuberoses, on stems, per doz. bunches.	18 0-24 0
Tulips, doz. bun.	6 0-12 0
— special double varieties, per doz. bunches	18 0-24 0
Violets, blue, English, per dz. bunches	1 6- 3 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, bushel	2 0- 7 0
— English, sieve or half bushel	1 6- 3 0
— — per barrel.	10 0-15 0
— Newtown Pippin	35 0-55 0
— — per case	22 0-25 0
Bananas, bunch .	7 0-10 0
— loose, per dozen	1 0 —
Chestnuts, per bag	14 0 —
Cobnuts per lb. .	0 6½ —
Cranberries, per box	13 0 —
Custard-Apples, per dozen	6 0-12 0
Grape-Fruit, per case	14 0-15 0

	s.d. s.d.
Grapes, Gros Colmar, per lb.	2 0- 3 0
— Alicante, per lb.	1 6- 3 0
— Almeria, doz. lb.	5 0- 8 0
— — per barrel.	12 0-20 0
Lemons, per case	9 0-18 0
Oranges, per case	8 0-45 0
— Blood	9 0-15 0
— Navel	12 0-14 0
— Jaffa, per box	12 0-13 0
— Seville	6 0- 6 6
Pears, Easter Beurré, per case	30 0 —
Pines, each	2 0- 4 0
Strawberries, A., per lb.	8 0-12 0
— — B., per lb.	3 0- 5 0

Remarks.—Prices for Cucumbers are somewhat lower, while those for Onions still remain high. American-grown Onions are now on sale; these command 15*s*. per cwt. The demand for Rhubarb has improved. Californian Pears of the variety Easter Beurré in boxes containing from eight to ten dozen realise from 30*s*. per case. The Radishes quoted at 8*d*. per dozen bunches are the Jersey-grown "long," while those at 2*s*. per dozen are "round" French. Cape-grown fruit is still arriving. Plums, 6*s*. to 10*s*. per case. Peaches, 3*s*. 6*d*. to 10*s*. ditto. Nectarines, 8*s*. to 12*s*. ditto. Pears, 5*s*. to 7*s*. ditto. Good English Apples are still obtainable; Blenheim Pippin is seen in remarkably good condition, also Wellington, Court-Pendu-Plat, and Golden Knobs, the prices for the two last-named ranging from 4*s*. 6*d*. to 7*s*. per bushel.

Potatos.

Dunbars, 80*s*. to 90*s*.; various, home-grown; 55*s*. to 75*s*. per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

There was no great change in the pot-plant trade at the end of last week. Business was very dull, but brightened somewhat on Tuesday, although at closing time there were considerable quantities of plants remaining on hand. Azalea indica is prominent; these plants are now very good and there is a moderately good trade done in them, but supplies are unusually large. Genistas are plentiful, and sell well, good prices being maintained for them. Erica Wilmoreana is now of good quality, as are also E. persoluta alba, Boronia heterophylla and B. megastigma. Acacias include A. cordata, A. Drummondi, A. armata and A. verticillata, all of which are well-flowered. Cinerarias are prominent, and have been in more demand during this week. Best plants of Cyclamen sell fairly well, but there are many of second quality which do not sell even at reduced prices. Hyacinths are over-plentiful, but many realise fair average prices. Supplies of Tulips are not so much overdone, and the tendency is for prices to go higher. Marguerites are still numerous; the demand for these is now better, though even now they do not all find purchasers. Azalea mollis is more plentiful, and prices are dropping slightly. Lily of the Valley, both in pots and in boxes, is very good with well-developed foliage. Primula sinensis is seen in better quality, and P. obconica is of good quality, but there is little demand for it. Spiræa (Hoteia) japonica is now plentiful; some of the plants are not well developed. Among Ferns, Palms, and other foliage plants, there is little variation to record. Large quantities of small Ferns remain unsold at closing time. The trade in hardy plants has not assumed any proportions at present, although large quantities are now arriving daily. Some Pansies in flower are seen; but the cold weather has checked these plants considerably.

Cut Flowers.

There has been a moderately good trade for cut flowers during the past week, and for some subjects prices have advanced. Supplies of Lily of the Valley are rather short, and although there are indications of its becoming scarcer, at present the prices have not advanced much. As suggested last week, prices for Lilium longiflorum have risen considerably, and even at higher prices it is difficult to secure good blooms. There is little variation in the trade in Daffodils; but there are now seen many flowers of the Barri section. Roses are fairly plentiful, and do not sell so readily as might be expected. Good fresh blooms of the variety Liberty were noticed unsold at close of the market. Prices for Violets are now down to the lowest ebb. Orchid blooms, especially Odontoglossums and Cœlogynes, are very plentiful; Callas have advanced in price. Tulips vary little; the extra fine double varieties realise up to 2*s*. per dozen blooms. Carnations continue abundant, at usual prices.

Cut Foliage.

Asparagus plumosus is now very good, as is also Smilax; much of this latter is now marketed in full flower. English hardy Fern-fronds are still of good quality, especially Polypodium vulgare and Polystichum angulare. Bronze-tinted Mahonia foliage is good. Maidenhair Fern is plentiful; some is good, but much of the new spring growth is soft. Ivy is plentiful. Large Cycas leaves are procurable; these make up to 2*s*. 6*d*. each. *A. H., Covent Garden, Wednesday, March* 1.

THE WEATHER.

Meteorological Observations taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending February 25, 1905.

1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
February 19 to February 25.	At 9 A.M.		Day.	Night.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.							
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
Means	36	35	42	34	30	39	42	44	Tot 0·23	3	31

THE WEATHER IN WEST HERTS.

Rain at Last.—The weather during the past week has been, as a rule, cold during the daytime; but the night temperatures have been only about average. On the coldest night the exposed thermometer showed only 6° of frost. The ground has become colder, and is at the present time at about a seasonable temperature at 2 feet deep, and about 1° colder than is usual at this season at 1 foot deep. Rain, hail, or snow fell on all but two days, and the showers of hail were at times heavy. On the morning of the 27th there was sufficient snow to nearly cover the ground. On the 26th rain, hail, and snow fell to the aggregate depth of between a quarter and half an inch—by no means a heavy fall for a winter month, and yet we have to go back six weeks in order to meet with one as heavy. Of the total fall of the week about three-fourths has already come through the bare soil gauge, and nearly as much through that on which short grass is growing—showing that the soil previously must have been fairly moist. The sun shone on an average for three hours a day, which is rather longer than is seasonable. There were two days altogether sunless, and, on the other hand, two others when the duration of bright sunshine exceeded five hours. The winds were, on the whole, moderately high, but on one occasion 19 miles was recorded in a single hour, direction south; while on another the average rate of movement for the whole day fell short of half a mile an hour. The mean amount of moisture in the air at 3 P.M. was about seasonable. *E. M., Berkhamsted, February* 28, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 136.]

Obituary.

Thomas Bounton.—It is with deep regret that I record the death of a promising young horticulturist, Thomas Bounton, who met with a serious accident while assisting to extinguish the fire at the Glen House. He fell from the top of a ladder 30 feet high, receiving a fracture of the spine, from which he succumbed on February 19. The deceased was greatly respected by all who knew him, and was a favourite with his employers. He was three years at Ardgowan, one year at Clovenfords, and three years foreman at The Glen. He took a keen interest in horticulture, and was a member of the Royal Caledonian Horticultural Society. His remains were interred at Douglas New Cemetery on the 22nd ult., a large number of mourners being present. *W. McIntyre, The Glen Gardens, Innerleithen, N.B.*

James Epps.—It is with regret we have to record the death of Mr. James Epps, junr., of Norfolk House, Beulah Hill, S.E., which took place recently, in Jamaica. Mr. Epps left England shortly before Christmas, on a visit to his Cacao estates. Mr. Epps was an ardent lover of horticulture, and was much interested in the rearing of economic plants. For many years he had been successful in cultivating and fruiting the "Cacao" tree in his conservatories at Beulah Hill.

Caroline Hogg.—We greatly regret to see in the *Journal of Horticulture* the announcement of the death, at the age of eighty-three, of Mrs. Caroline Hogg, the widow of Dr. Robert Hogg. Many of our older readers will treasure pleasant recollections of the deceased lady.

TRADE NOTICES.

Mr. S. M. Waldram, until recently Manager of the Rose Farm Nurseries, Wrotham, and formerly of Salisbury Nursery, Edmonton, has been appointed Manager to Messrs. A. Bateson, Bashley Nursery, New Milton, Hants.

Mr. F. W. Ashton will terminate on March 4, 1905, his connection with Messrs. Stanley & Co., of Southgate, late Stanley, Ashton & Co., and on March 6 he will enter the service of Messrs. Hugh Low & Co., Bush Hill Park, Enfield, as Orchid representative and traveller.

GARDENING APPOINTMENTS.

Mr. W. Simpson, formerly Gardener at The Grange, Sutton, Surrey, and at present Gardener at Wemyss Castle, Fifeshire, will shortly vacate this latter position, and be open to receive a new appointment.

Mr. Jas. Brown, for the past two years Gardener at Orford House, near Market Rasen, as Gardener to Sir George S. Mackenzie, K.C.M.G., Tempford Hall, near Sandy, Beds.

Mr. J. D. Robertson, Foreman at Shooter's Hill Cemetery, S.E., and previously for four years Foreman of Greenwich Park, has been appointed Superintendent of the Hammersmith Borough Council's Cemetery.

Miss M. Agar, formerly a student at the Horticultural College, Swanley, and afterwards Garden Mistress at Wycombe Abbey School, as Landscape Gardener to the Metropolitan Public Gardens' Association, in the place of Miss Wilkinson, who has lately resigned that post.

Mr. H. A. Peck, late Foreman at Woburn Place, Addlestone, Surrey, as Gardener to J. R. Kelly, Esq., Oaklands, Worplesdon, Surrey.

Mr. C. L. Laurence, for the past four and a half years at Harwood Hall, Upminster, Essex, has been appointed Gardener to H. H. Platten, Esq., at that place. The appointment to date from Nov., 1904.

Mr. Geo. West, late Gardener, Redlands, Broadstairs, as Gardener to F. Ricardo, Esq., The Friary, Old Windsor, Berks.

Mr. R. Greenfield, Gardener to the Birmingham Hospital Saturday Fund at Tyn-y-coed, Llanrhos, N.W., has also taken over the supervision of Marle Hall Gardens.

Mr. P. W. Barnard, recently Foreman at Pyt House Gardens, Tisbury, Wilts, as Gardener to D. Crossman, Esq., Dudbrook House, Brentwood, Essex.

Mr. Chas. Ford, Gardener to Capt. A. H Thurburn, Hales Hall, Market Drayton, as Gardener to the same gentleman at Cransley Hall, Kettering.

Mr. A. T. Paskett, for the past two and a half years Gardener to Philip Secretan, Esq., Slaugham Park, Crawley, Sussex, as Gardener to Capt. The Hon. and Lady Edith King-Noel, Horsley Towers, Leatherhead, Surrey.

Mr. H. Rodman, late Gardener to H. Forbes Cotgrave, Esq., Winscombe, Somerset, as Gardener to Miss Meade King, Taunton, Somerset.

Mr. J. Roberts, for the past ten months Gardener to Major Platt, Chesterford Park, Saffron Walden, Essex, as Gardener to W. Harker, Esq., Blofield Hall, Norwich.

Mr. C. Benns, for the past year and six months Gardener at the Abbey, Aston Abbotts, Aylesbury, as Gardener to W. H. Herbert, Esq., Newnham House, Wallingford, Oxon.

ENQUIRIES.

Grass on Russian Railways.—What is the Grass used along the Russian railways in Amur Daria to fix the sand? and what is the glaucous-leaved shrub used for a similar purpose? *A. B. H.* [We suggest that the Grass is Ammophila arenaria, and the shrub either an Elæagnus or Hippophae rhamnoides. Ed.]

Continental Labels.—What is the composition of the yellow wash used on wooden garden labels used in continental nurseries? *Correspondent.*

ANSWERS TO CORRESPONDENTS.

⁂ **Editor and Publisher.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Books: *G. B.* You do not state sufficient particulars of what you require. Perhaps *Gardening for Beginners* would suit you. Price 16s. 9d., post-free, from our Publishing Department.—*A Derbyite. Veitch's Manual of the Coniferæ*, price 20s. 6d. post free from Messrs. Jas. Veitch & Sons, King's Road, Chelsea; or from our Publishing Department.

Cucumber Plants: *J. R.* Are you certain that no injurious ammoniacal vapours are proceeding from the hot-bed on which the plants are cultivated. If there are no such vapours the injury may be due to the effects of too much artificial heat. Maintain a moist atmosphere in the house and plant the young plants on raised mounds at a suitable distance from the hot-water piping. A temperature at night of 70° would be better than greater heat. If you suspect fungus to be the cause forward specimens to us for investigation.

Daffodils: *T. Clift.* We expect you mean the double variety of N. Telamonius (N. pseudo-Narcissus), the common Daffodil, which for some reason or other often shows green colouring in the flowers.

Dendrobium: *P. C.* You have given too much or too little water; either extreme would produce the appearances presented.

Gardeners' Association: *A. P. & L. S.* There is no Society that offers just the aid that you seek. At the same time the Gardeners' Royal Benevolent Institution (Secretary, G. J. Ingram, 175, Victoria Street, Westminster) provides for aged gardeners who are no longer able to follow their profession, and for gardeners' widows. Being a Benevolent Institution and not self-supporting, subscribers cannot demand assistance immediately they are in need of help, but have to await the result of election by contributors to the funds. The Committee however allot votes to candidates for pension, previous to election, according to the amount of subscriptions they may have paid, and this system in practice makes it almost certain that a candidate who has subscribed to the funds of the Institution during the greater part of his life will be successful at the election. To be eligible for a pension it is not sufficient to prove that a candidate has subscribed all his life, or was a life member, but he must also satisfy the Committee that he has insufficient means to maintain himself. The Royal Gardeners' Orphan Fund (Secretary, Brian Wynne, 30, Wellington Street, Covent Garden, London, W.C.) provides for gardeners' orphans, also on the elective principle. The Fund is deserving of hearty support from gardeners, and the funds at present are insufficient to meet the needs now existing. In the United Horticultural Provident and Benefit Society (Secretary, W. Collins, 9, Martindale Road, Balham, London, S.W.) the principle of self-help is stronger, and there is less benevolence. Most of the funds are contributed by benefit members themselves, and during illness any member receives by right weekly payment from the Society. The management of the Society is most economical, and in addition to the sick pay during illness, it provides in a measure the advantages of a bank and of an insurance society. Any gardener would be well advised in joining this Society. In regard to your question respecting payment during the time a gardener is out of employment, there is no organisation that does this at present. If such work should be undertaken in the future it would naturally be by the new British Gardeners' Association (Secretary *pro tem.*, W. Watson, Kew Road, Kew), but even this Association could not possibly undertake such responsibilities until gardeners were thoroughly organised. The Association does not mention the subject in its prospectus.

Gardener's Notice: *G. D.* You do not state whether you are living in the gardens or in a house belonging to your employer elsewhere. He cannot demand a month's notice from you unless he can prove that you are a menial or household servant, and it has been held that this is not the case unless you are at your employer's service in the evenings as well as during the day. We note that you are paid weekly.

Garden Pencil: *F. S.* We are informed that samples of the wood-marking pencil, described on p. 101, may be obtained from Mr. J. P. Hemming, 39, Noble Street, London, E.C.

Grapes: *P. C.* The berries have been kept too long, they are decaying naturally.

Gumming in Peach and Apricot Trees: *L. F.* Gummosis, as this disease is technically known, appears to be caused by badly-drained soil, a bleak situation, causing undue exposure to cold winds, or to injuries from frost and external wounds. The latest discoveries on the subject point to the presence of bacteria as being the final cause of gummosis.

Heaviest Bunches of Grapes (see p. 96): *J. F. M.* We think you must be wrong in stating that Mr. Dickson showed the bunch that weighed 26 lb. 4 oz., for our information was taken from the report of the Edinburgh Exhibition which appeared in the *Gardeners' Chronicle* at the time, and in the following issue when illustrations of the bunches were published, the names of the exhibitors were the same. Moreover, in Hogg's *Fruit Manual* it is also stated that Mr. Curror, of Eskbank, exhibited the heaviest bunch.

Hippeastrum (Amaryllis): *E. A. H.* A good average flower, but of no special merit.

Iris Kæmpferi or lævigata: *G. W.* This species is by no means one that should not be manured, but on the contrary it requires exceedingly rich soil and heavy mulchings of cow or similar manure. You have not stated whether the plants are growing with their roots actually in water or upon ground that can be flooded when necessary in summer. The mulchings of cow-manure are best applied in autumn.

Mushrooms Diseased: *J. G.* Your Mushrooms are attacked by another fungus, a species of Hypomyces. All the diseased Mushrooms should be carefully removed and burned as soon as they appear. When new beds are prepared, and before the spawn is deposited, spray the soil and walls with a $2\frac{1}{2}$-per-cent. solution of lysol. A high temperature and stuffy, stagnant atmosphere favour the disease.

Names of Plants: *W. R.* Probably Veronica Hendersoni.—*G. M.* No. 2 is not a Cupressus, but Juniperus chinensis.—*B.* Lælia superbiens.—*Constant Reader.* 1, Selaginella denticulata; 2, S. Mertensii; 3, S. plumosa; 4, S. umbrosa; 5, S. Wildenovii; 6, S. cæsia; 7, S. caulescens; 8, S. stolonifera. The trailer is Ficus stipulata (repens).—*F. A.* 1, Lælio-Cattleya × elegans; 2, Odontoglossum × Adrianæ; 3, O. Lindleyanum; 4, Oncidium candidum, sometimes called Palumbina candida; 5, Restrepia maculata; 6, Pleurothallis rubens.—*C. E. P.* Eria bractescens.—*J. B. C.* Muhlenbeckia complexa, a good rockery or basket plant.—*J. E.* The yellow flower is Jacobinia chrysostephana. The spots on the Ixora leaves are probably caused by condensed moisture falling on them.—*C. H.* 1, Dendrobium aureum; 2, Stelis ophioglossoides.—*C. J. Ote.* One of the garden forms of Helleborus caucasicus.—*F. L. H.* 1, Cryptomeria japonica; 2, C. elegans; 3, Abies Pinsapo.—*H. L. N.* You send more than six specimens; and you should therefore contribute a small amount to the Orphan Fund. The list is incomplete, some of the specimens need careful comparison. 1, Cupressus sempervirens; 2, Thuya orientalis var.; 3, Juniperus virginiana; 4, Pinus sp., next week; 5, Juniperus communis var. stricta; 6, Juniperus; 7, Cupressus nootkatensis; 8, Pinus excelsa; 9, Thuya orientalis; 10, Libocedrus decurrens; 11, Cupressus Lawsoniana; 12, Juniperus virginiana.

Palm Roots: *P. C.* So far as we can tell from the scrap received, the roots are affected with a scale like Mealy-bug. Wash the roots thoroughly, and steep them in tobacco-water. Be careful not to apply any strong insecticide or you will kill the roots.

Pelargoniums: *C. & A. B.* You have apparently coddled your plants too much by growing them in too moist and too warm an atmosphere without sufficient ventilation.

Sulphate of Iron for Roses: *C. D.* Dr. A. B. Griffiths recommended, in his *Special Manures for Garden Crops*, a chemical manure composed of $\frac{1}{2}$ oz. of superphosphate of lime, and a $\frac{1}{4}$ oz. each of iron sulphate and sulphate of ammonia. These quantities were to be put into two gallons of water, and the liquid applied to the roots without wetting the foliage. He also printed a letter from a cultivator in which the writer described in glowing terms the good effects of sulphate of iron upon his Roses. The late Rev. A. Foster-Melliar, M.A., who was a famous Rose grower, declares that his experience was not so favourable to the use of this manure. In *The Book of the Rose*, of which the third edition has just been issued, Mr. Foster-Melliar states that sulphate of iron is said to give a better colour to the foliage, and in some sorts, such as Anna Olivier, to the blooms as well, but he did not place much reliance in this. At the same time he recommends the following mixture, as prescribed by Mr. Tonks upon the the result of analysis of the ash left from the burning of Rose plants:—

Superphosphate of lime	12 parts
Nitrate of potash	10 ,,
Sulphate of magnesia	2 ,,
Sulphate of iron	1 ,,
Sulphate of lime	8 ,,
	33 ,,

This mixture is applied in February and scattered over the previously hoed surface of the bed at the rate of $\frac{1}{4}$ lb. to the square yard. A second and lighter dressing may be applied at the end of May if heavy rains have occurred. If you refer to the issue of *Gardeners' Chronicle* for March 19, 1904, p. 178, you will find an article by Mr. J. J. Willis on special soils and manures for Roses.

Vegetables and their Cultivation: *C.* In our notice of this book, p. 117, we omitted by inadvertence to give the name of the publishers. We supply the omission by stating that the book can be had from Messrs. W. H. & L. Collingridge, 148, Aldersgate St., London, E.C.

Wood-lice: *G. D.* If you take some pieces of Potato or of Swede and hollow out the under-surface, so as to provide a retreat for these pests, you will be able to destroy a number each morning upon examination of the traps, which afford food for the wood-lice.

Communications Received.—A. H.—T. S.—C. F.—A. D.—J. F. M.—E. J. A. (photos with thanks)—S. W. F.—C. T. D.—J. Ambrose & Son—F. E.—J. T. D.—J.—F. P.—Harry L. (next week, thanks for contribution to Gardeners' Orphan Fund)—J. L. W.—H. D. P.—T. C.—G. J.—W. B. B.—R. L. P.—A.—Clibrans—W. R., Sandy—E. N. H.-J. R. J.—G. H. H.—R. M.—R. Butler—F. J.—A. C. B.—G. D.—Rev. D. R. W.—W. M.—E. J. A.—J. O'B.—R. P.—E. H. J.—J. D.—W. H. C.—A. H.

THE

Gardeners' Chronicle

No. 950.—SATURDAY, March 11, 1905.

CONTENTS.

Agave americana causing skin irritation 156
Alpine Garden—
  Crocus chrysanthus and its varieties ... 148
America, State horticulture in 154
Apple Tower of Glamis 155
Apples from Devonshire, some little known 156
Books, notices of—
  Handbook of Forest Botany 157
  Publications received 154
  Royal Horticultural Society's Journal 156
  The Book of the Lily 157
  Variations of Animals and Plants under Domestication 157
Botanical Congress at Vienna 153
British Columbia, fruit-growing in ... 154
Caladiums, culture of 149
Caoutchouc and Coffee 153
Cephalipterum Drummondii 154
Colonial notes 150
"Drip" in plant-houses 155
Edinburgh International Horticultural Exhibition 152
Epiphytes in England 154
Eremurus, the species of 148
Fisher, Mr. Peter ... 155
Forestry at Oxford ... 153
Forestry, facts and fancies in 155
Fruit prospects ... 156
Fruit register 148
Fruit, the grading of . 153
Garden ornaments ... 147
Gardeners' Association, the British 152
Gladiolus, hybridisation of 145
Iris tectorum on thatched roofs ... 154
Mendel's experiments with Peas 154
Obituary—
  Fraser, Patrick Neill 157
  M'Omish, Donald ... 157
Orchid notes and gleanings ... 145, 146
Peaches, early 156
Peach-trees, manure for 156
Phalænopsis Schilleriana at Tring Park ... 152
Physianthus and Jasminum fruiting in the open 155
Plants, new or noteworthy—
  Rhabdothamnus Solandri 146
Polygonum cuspidatum on river banks 153
Potatos 153
Rhododendrons, Himalayan 155
Roberts, Mr. J., presentation to 153
Societies—
  Aberdeen College of Agriculture ... 158
  Gardeners' Debating 158
  National Potato ... 158
  Nursery and Seed Trade Association 158
  Royal Horticultural Scientific Committee 158
Spiræa bracteata ... 149
Vegetables—
  Rotation of kitchen-garden crops ... 147
Week's work, the 150, 151

ILLUSTRATIONS.

Glazing-bars for preventing "drip" in glasshouses 155
Phalænopsis Schilleriana with eighty-eight expanded flowers (Supplementary Illustration).
Rhabdothamnus Solandri, a shrubby Gesnerad from New Zealand 146
Spiræa bracteata, a handsome hardy shrub 149
Well-head, a Venetian, used as a garden ornament. 147

HYBRIDISATION OF GLADIOLUS.

A CORRESPONDENT of the *Gardeners' Chronicle* recently asked for information on the cross-fertilisation or hybridisation of the Gladioli. No operation in gardening is more simple, and there are few garden plants that can be raised from seed and flowered with less trouble. Cross-fertilisation is the easiest and most simple process, and for garden purposes the crossing of the many beautiful varieties of G. gandavensis is the most desirable practice, and gives the best results. Suppose a dozen of the best varieties is obtained to start with. They should be planted in rich, rather sandy loam. The flowers will be produced in July and August. The parts of fructification are very prominent. The anthers are balanced on the filaments, and these can easily be removed with the fingers before the pollen-cases burst. After twenty-four hours the stigmatic part of the flower is ready for the application of the pollen. I simply pinch off the filaments on which hang the ripened anthers, and gently touch the stigma with them. The plants must be gone over daily between one and two in the afternoon until the entire spike has been cross-fertilised. It is important that the seed-bearing plant should be one that has well-formed flowers, and the pollen-bearer should also be of good form and of the colours most desired by the operator.

Hybridisation is the crossing of two distinct species, but in Gladiolus the results of this operation are not so certain as the mating of two varieties of one species. There are distinct species that cross readily enough, others do not; but this is a point that the cultivator would do well to study for himself, as there are numerous distinct species in cultivation. Many good and distinct crosses have already been obtained, and as a result many beautiful plants have been added to our gardens; but the field is very large, and not a hundredth part has been accomplished of what may yet be done in this fair field of garden culture. Some useful information for beginners may be obtained from Dean Herbert's interesting book, the *Amaryllidaceæ*.

The chapter on hybrid intermixtures contains his results of hybridising the Gladioli, but seventy years ago the material at his disposal was very inadequate in comparison to that which is now available. The soil in his garden at Spofforth was specially adapted to this plant. He says, "They succeed very well in the natural soil, which is a good yellowish, light loam, suitable for Barley, and also in the artificial borders of peat and sand. These hardy crosses are between G. cardinalis, blandus, carneus, inflatus, augustus, and tristis, and they vary with every shade of colour from white to scarlet, rose, coppery and blackish-purple, and some are exquisitely speckled in consequence of the cross with tristis." Herbert adds, "Clusters of these seedlings stood undisturbed for twenty years by merely covering them with leaves from November to March or April." Certain specific forms would not cross; for instance, G. psittacinus would not cross with any of those species named above. G. byzantinus could not be fertilised with the pollen of G. tristis. Crosses from G. hirsutus, recurvus, and versicolor were found to be delicate in the Dean's garden, being unable to bear the vicissitudes of our variable climate.

There are fifty-five species figured in the *Botanical Magazine*, and thirty-nine of these were introduced before 1830, in which year G. psittacinus was figured; it also flowered for the first time in England in that year, so that Herbert had ample material to work upon. Of course good additions have been made since that date, amongst others G. Saundersii, G. purpureo-auratus, and G. dracocephalus. A very remarkable species is G. sericeo-villosus, collected by Mr. Cooper in Cape Colony for the late Mr. W. Wilson Saunders, and figured in the *Botanical Magazine*, t. 5427. It develops a spike 3 to 4 feet in height, freely set with yellowish flowers, the stem densely clothed with long, shaggy, silky hairs. This distinct species may not now be in existence in gardens, but this and others I have named of recent introduction may well be taken as types to become parents of quite distinct garden plants. Good work has been done already in this direction.

M. Lemoine, of Nancy, managed to cross G. gandavensis with G. purpureo-auratus with excellent results. There are also the G. Childsii and G. nancianus hybrids; these are amongst the most beautiful of garden flowers. When the seed-pods have been formed and ripened, they are gathered as soon as the capsules show signs of opening; the crosses are marked and entered in a book for future reference. The capsules will, if placed in a dry room, speedily burst open. Let the seed be quite dry before it is put into paper-bags, and keep it in a dry cool place until March. Sow the seed in that month thinly in pans or flower-pots, using good potting-soil, as it is intended the plants should remain in these to make their growth during the season. The seed germinates best over a gentle hot-bed; the plants will appear in two weeks. When all of them have done so admit air to the frame rather freely, and as the season advances the lights may be removed. Corms will be formed varying in size from that of a pea to that of a Hazel-nut; and when the leaves assume a yellow tinge the bulbs should be shaken out and placed in dry sand in a cool room from which frost is excluded. They may remain there until March, when they should be planted out in the border in shallow drills 18 inches apart, putting the corms 6 inches distant from each other. Although they are of such small size, they will produce very nice spikes of flower the same season, so that they may be brought to their flowering stage eighteen months from the time of sowing the seed. They require good soil if tall, handsome spikes are to be produced.

For garden purposes the varieties of G. gandavensis are esteemed; they produce handsome spikes of very beautiful colours, and hundreds of singularly beautiful forms are obtained by the cross-fertilisation of these varieties. It would be necessary to purchase the best varieties to start with, and then the result will not be problematical, for I write from my own experience, having raised thousands of seedlings from the G. gandavensis varieties, and never failed to obtain many plants as good as or even better than the parents. *J. Douglas.*

ORCHID NOTES AND GLEANINGS.

THE COLLECTION AT WOODHATCH, REIGATE.

IN the *Gardeners' Chronicle* for March 26, 1904, an illustration was given of the Dendrobiums then in flower in the gardens of Mrs. Haywood, Woodhatch, Reigate (gr., Mr. C. J. Salter). Many of those specimens were grown from seedlings and were furnished with seven or eight flowering growths, each 4 feet in length and bearing fifty or sixty flowers on a growth. Some curiosity was felt as to whether plants so grown could be maintained at this high standard, but a visit to Woodhatch this year disclosed the fact that the specimens had even improved on their good condition of last year in every respect. Not a trace of "spot" or disease has appeared on the plants, and their grower may well be proud of them. Most of the specimens are of crosses of the D. × Ainsworthii and D. × splendidissimum classes. These again have been crossed with other species and varieties, the result being great variety and beauty of flower. Some of the most remarkable are D. × Ainsworthii Woodhatch variety, D. × Ainsworthii intertextum (both with a yellowish-white ground colour); D. × melanodiscus Salteri and D. m. gloriosum, two of Mr. Salter's certificated recently; D. × splendissimum Mrs. Haywood (with very large lilac-rose flowers with maroon centres), and D. × Edithæ superbum. A number of the best forms of D. nobile, D. × Cybele, D. × Schneiderianum, D. × Juno, and others are also in bloom, the whole making a very fine display. In the matter of culture, Mr. Salter regards it as being most simple. Sphagnum moss with a sprinkling of sand is the material used for potting. He gives plenty of pot-room, repotting the plants when roots are proceeding from the new growths, and keeps them during the growing season in a house from 75° to 90° Fahr. Abundance of moisture is supplied and air given cautiously by means of the top ventilators only. The plants are shaded until the growths approach maturity, when in the end of August the blinds are removed and full sunlight and plenty of air admitted. From the end of November to the end of January the plants are kept cooler (about 60°) and dry, only a little water being given to prevent shrivelling. In the beginning of February the houses are kept more moist, and the plants prepared for flowering.

The little warm Phalænopsis-house has a small lot of Phalænopsis, which have been in the gardens for many years, and which have now grown to large specimens and are sending up spikes. In many other gardens these plants grow well when the proper place can be found for them, although they frequently fail when tried in other quarters.

In a similar manner Vanda Sanderiana, with which most growers have a difficulty, has grown well here from the first importation.

The range of cool-houses has a number of good things in bloom, including some grand pans of the white Masdevallia tovarensis, a nice specimen of M. Schroderiana, and some other Masdevallias, good Cœlogyne cristata and its variety hololeuca, Pleione humilis, Ada aurantiaca, Epiphronitis × Veitchii, grown into little bushes bearing a profusion of cinnabar-scarlet blooms; Oncidium cheirophorum with many slender spikes of yellow flowers, Sophronitis grandiflora, and other pretty species.

In the warmer houses are a good selection of Vandas and Aërides, Arachnanthe (Vanda) Cathcartii, and a few others being in bloom or bud. The Cypripediums have large specimens of several hybrids raised at Woodhatch in bloom, and in bud a very promising hybrid between C. × T. B. Haywood and C. bellatulum. Also good Cypripedium Mastersianum, C. × Euryades, and C. × Harrisianum superbum. A large number of Miltonia vexillaria are showing well for flower. Among the Cattleyas in bloom are C. Trianæ and C. maxima, and a good supply of buds showing to continue the display.

The herbaceous Calceolarias, Cyclamen, and some other florists' flowers, for the culture of which Mr. Salter is famed, are in grand condition for flowering; and the great quantity of fruit-trees have smooth, clean bark, pleasant to look at even in winter. *J. O'B.*

DENDROBIUMS AT BURFORD.

The following Dendrobium species and hybrids are now in flower in Sir Trevor Lawrence's Orchid houses at Burford, which, when grouped together, make an interesting and attractive display of bloom:—

Species.—D. glomeratum, Fytchianum, Wardianum, W. album, fimbriatum, f. oculatum, nobile, n. elegans, n. Ballianum, n. Statterianum, n. Murrhiniacum, n. Burford variety, cruentum, primulinum, p. giganteum, Pierardi, signatum, s. aureum, crumenatum, Harveyanum, Ashworthæ, Kingianum, K. album, specio-Kingianum, aggregatum, sulcatum, æmulum.

Hybrids.—D. Dominianum, Cybele, Wiganæ, W. xanthochilum, W. album, W. nobilius, melanodiscus, chrysodiscus, Burfordiense, Melpomene, Cassiope, splendidissimum, s. grandiflorum, s. delicatum, Juno, Mrs. Haywood, Leda, Apollo grandiflorum, A. album, aureo-Wardianum, Wardiano-japonicum, Sybil, Luna, Blackianum, xanthocentrum, Hebe, Clio, C. superbum, C. Burford variety, Aspasia, Artemis, Ainsworthii, A. Woodhatch variety, A. Hazelbourne variety, The Pearl, Kennith, euosmum virginale, e. leucopterum, Rœblingianum, pallens, Aurora, Myra, Ethel, Euterpe, Euryclea, Stratius. *W. H. W.*

SYNANTHY IN CYPRIPEDIUM EXUL.

A correspondent kindly sent us recently a remarkable flower of this species with two standards (dorsal sepals) and one lower sepal, forming one complete whorl of three segments, alternating with which are three lateral petals forming a second whorl. There are two lips, one partially enclosed within the other, a single column, and two distinct staminodes. The ovarian cavity is single, with three parietal placentas. The obvious explanation is that we have here to do with a fusion of two flowers, but how, when, or why the fusion took place is not apparent. Both flowers issued from the axil of a solitary bract.

DISEASE IN PHALÆNOPSIS.

In the *Zeitschrift für Pflanzenkrankheiten*, vol. xiv., pp. 263—266, 1904, Prof. Sorauer publishes some details respecting a hitherto undescribed disease that attacks the leaves of Phalænopsis amabilis, and particularly of the variety Rimestadtiana. It shows itself in the form of numerous specks upon the leaves, which range in colour from yellow to black. The diseased portions are at first somewhat wart-like, but at a later stage they sink and form depressions. The cellular contents of the infected tissue disappear almost entirely, and in consequence the cells themselves shrivel up. Isolated in this dead tissue are found the fungoid spores. Herr Sorauer gives a minute description of the changes exhibited in the course of the disease by the cellular matter, and more especially by the chloroplast. According to Sorauer's opinion, the disease is induced by over stimulation, which can be lessened by a change in the method of the cultivation of the plant. They should be kept cooler and dryer, and besides this an improvement should be made in the soil by adding some lime and small pieces of charcoal.

NEW OR NOTEWORTHY PLANTS.

RHABDOTHAMNUS SOLANDRI.*

To those who interest themselves in the geographical distribution of plants the occurrence of a Gesnerad in New Zealand offers some knotty problems for solution. Did it originate there—or how did it get there? Most of its relatives are natives of tropical or subtropical countries, especially in the Western Hemisphere. To horticulturists, however, it is of more importance to know that it is in cultivation.

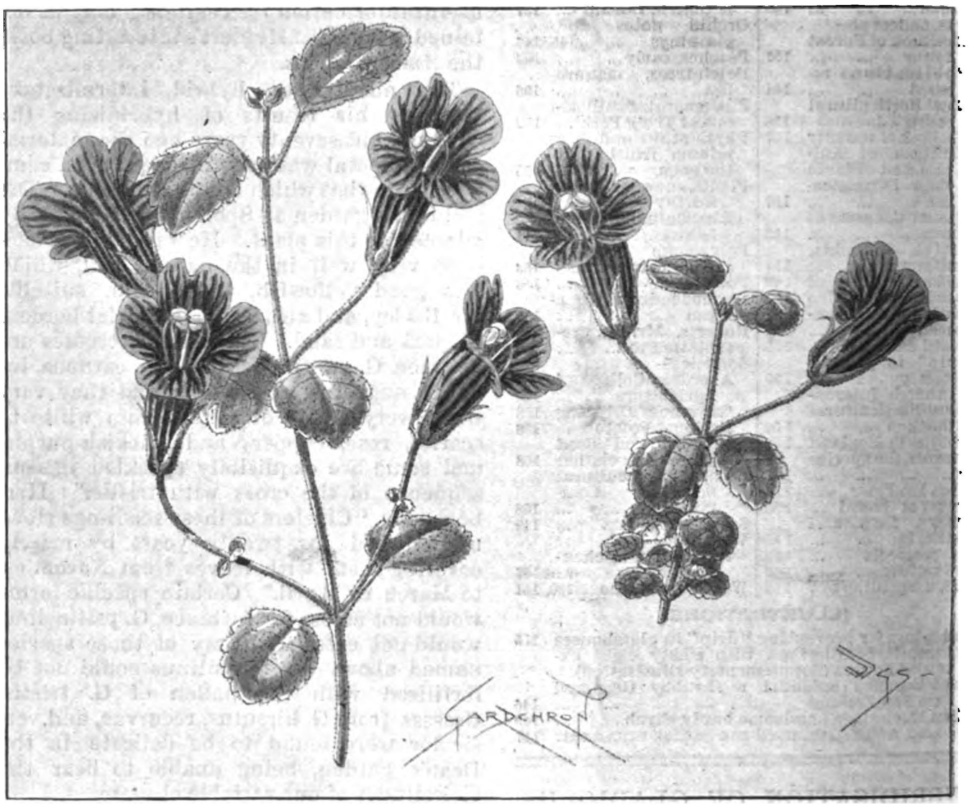


FIG. 59.—RHABDOTHAMNUS SOLANDRI: FLOWERS ORANGE.

It is to Mr. Gumbleton that we are indebted for the opportunity of illustrating this interesting plant, of which we append in the foot-note a full description, taken from Sir Joseph Hooker's *Handbook of the Flora of New Zealand*. Its orange-coloured striped flowers are attractive. It would in most cases need the protection of a greenhouse, but

---

[*] 1. *Rhabdothamnus*, A. Cunn.—A slender, hispid or pubescent shrub. Leaves opposite. Flowers solitary or in pairs. Sepals five, unequal, persistent. Corolla-tube campanulate; limb 2-lipped; upper lip 2-lobed, under 3-lobed. Stamens four, the fifth rudimentary; filaments slender, arched; anthers cohering cruciately. Disk thin, annular, lobed. Ovary 1-celled, narrowed into a slender style; stigma small, obtuse, 2-lobed; ovules numerous, on 2-lobed prominent placentas. Capsule ovoid, beaked, 2-valved; valves 2-fid, separating from the placentas. Seeds very minute, albuminous.

1. *R. Solandri*, A. Cunn., Fl. N. Z., I. 186.—Shrub 2—4 feet high; branches opposite, hispid, terete. Leaves on slender petioles, broadly obovoid or orbicular, ½—1 inch diam., coarsely toothed, harsh to the touch. Flowers axillary or terminal; peduncles slender, ½—¾ inch long. Sepals lanceolate, acuminate, ⅓ inch long. Corolla ¾ inch long, orange with red stripes. Capsule shorter than the calyx.

Northern Island: from the Bay of Islands to Wellington, Banks and Solander, &c. The foliage somewhat resembles that of Trophis aspera and Carpodetus serratus.

in favoured situations it might even prove hardy. Mr. Gumbleton favours us with the following note concerning it:

"The accompanying illustration (fig. 59, p. 146) gives an admirably faithful and accurate idea of this pretty and most free-blooming as well as botanically interesting little plant, which is known as the shrubby Gesnerad from New Zealand. I obtained my plant early last autumn from M. Lemoine, of Nancy, who, I think, raised it from seed. It was in a very stunted and sickly condition when it reached me, and for some time I feared it would die, but on being planted out in a frame it soon recovered, and is now growing rapidly and assuming quite a shrubby appearance. It began to bloom early in December, and is now covered with flowers and buds. The flowers resemble those of a Tydæa in form, and are of a deep orange colour striped with brown. *W. E. Gumbleton.*"

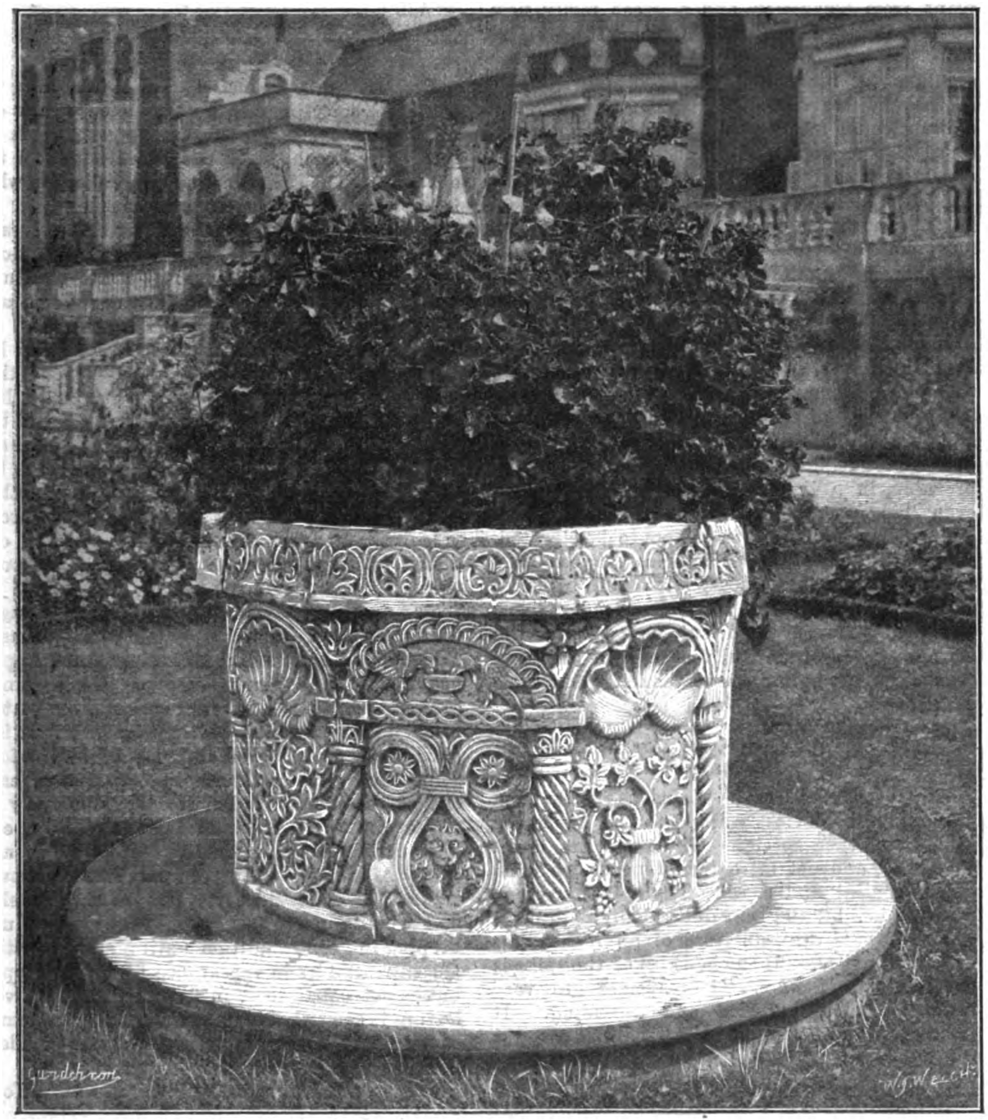


FIG. 60.—ANCIENT VENETIAN WELL-HEAD AT TYLNEY HALL, HANTS.

GARDEN ADORNMENTS.

THERE are few matters in which greater judgment and more refined taste are demanded than in the introduction of architectural features or statuary into gardens. Those whose fancy leads them in that direction are wont to call attention to such places as Versailles and various gardens in Italy, where architecture or sculpture is allowed to intrude into the domain of the gardener. We cannot say that the result is altogether satisfactory. In many cases it is so much otherwise that the statuary becomes ludicrously out of place, and the often exquisite proportions of the vases fail to attract because of the incongruousness of their surroundings. Nevertheless there is abundant room for the display of individual fancy, and the garden of an eminent anatomist was not disfigured by the remains of extinct animals or the curved outlines of gigantic ammonites. Often too the memory of former travel is pleasantly evoked by some object seen and purchased when the owner was travelling. This may have been the case with the ancient well-head at Tylney Hall, Hampshire, the residence of L. Phillips, Esq., of which we give an illustration (fig. 60) after a photograph by Mr. Mason Good.

The structure in question is said to be of Venetian origin, and the style of ornamentation seems to point to the Lombardic or Romanesque period, when the severity of old Roman types was becoming modified by a freer and more decorative treatment. In any case the "well head" possesses great interest and no little beauty.

VEGETABLES.

THE ROTATION OF KITCHEN-GARDEN CROPS.

(Concluded from p. 123.)

THE last subject treated of in the *Gardeners' Chronicle* for February 25 were winter and spring Broccoli. These were planted in the previous July after a crop of Strawberries, which had occupied the land for the three previous years, so that by the time the last of the Broccoli is cleared away the ground will have been continuously under crops for nearly four years without cultivation, other than surface tillage and surface manuring. The time has now come therefore for it to be trenched and manured for the succeeding crops, which should be Seakale and Leeks. The autumn and winter Broccoli will all have been cleared in time for the preparation of the land for these crops, but the latest of the Broccoli probably not until the middle or end of May. These late varieties are valuable in completing the circuit of the year in which they can be had in use, for the early Cauliflowers come in in May, often before the Broccoli is over. The land on which the late section of the Broccoli has stood may be used for a variety of crops, after having been trenched and manured. In the south Tomatos or Marrows would succeed, provided the plants were strong and of good size when planted-out; or early Brussels-Sprouts and early Savoys would be suitable. The land under Seakale and Leeks will have been deeply stirred in digging up these roots, so that very little further cultivation will be needed, but if a moderate dressing of manure can be applied when the land is forked over for the succeeding crops, which should be Brussels-Sprouts, Savoys, and Winter and Spring Kale, the value of these crops will be correspondingly increased.

ROOTS.

Although roots do not usually occupy a large extent of land in any garden, they are amongst the most indispensable of vegetable crops. The land I have found to be most suitable for the growth of these is that which has been trenched and well manured the year before and on which late Peas have been grown. The only preparation necessary for these crops on such land is to fork the ground over and level the slight ridges left by the rows of Peas. Parsnips should be sown as early in February as a favourable day can be found, Carrots in the middle of March, Chicory, Salsafy and Scorzonera early in April, and Beetroot at the end of that month. If seeds of these root crops are sown too early there is danger of the plants bolting into seed and proving useless. Jerusalem and Globe Artichokes are usually grown in some out-of-the-way corner not far from the Rhubarb quarter.

There are other subjects of minor importance for which it is scarcely possible (or indeed necessary) to find a place in the general order of rotation—such as Turnips, Summer Spinach, Broad and French Beans, Scarlet Runners, Lettuce, Endive in succession, and other salad material. Some of these may very well be grown between rows of Peas if sown at the same time. Spinach is an instance, as this would be gathered before the Peas were in pod. For the others mentioned, spare corners of well-manured land are always available. The subject of the rotation of crops would be incomplete without reference being made to the value of borders having north or even east aspects. The former, especially in hot summers, is invaluable for the growth of Lettuce and other salads, Turnips, Spinach, and similar succulent crops, which it is next to impossible to grow successfully in extreme hot and dry weather in exposed quarters. These cooler quarters of the garden are none the less valuable for the growth of soft summer fruit, such as Strawberries, Gooseberries, and Currants, in order to prolong the season in which they can be had ripe. *Owen Thomas.*

ALPINE GARDEN.

CROCUS CHRYSANTHUS AND ITS VARIETIES.

In my garden I have generally flowers of some varieties of this species in January, but the time is somewhat prolonged and it is March before they are usually over for the year. Crocus chrysanthus is rather widely spread in its habitats, being found in western Asia Minor, the North of Greece, and in European Turkey, while it is also found at altitudes varying from little above the sea-level to about 5000 feet. Its colour variations are wider than are to be found in most of the Crocus species, and it has been remarked that there is no other known instance of a species with orange-coloured flowers giving a form with lilac flowers. The typical plant, as found near Smyrna, is of a uniform rich, orange colour. In the variety fusco-tinctus the outside of the outer segments is suffused with rich brown, and the variety fusco-lineatus has featherings of the same colour. These are both remarkably pretty forms, and they seem among the first to flower each year. I have had two sizes of these; but a very small one is a charming little flower, opening brightly to what sun we may have in the middle and end of January in average seasons. A white variety, named C. c. albidus, is also in cultivation, but it is not so pretty as the pleasing C. c. cœrulescens, which has lilac flowers. There are a number of other and intermediate shades, such as the sulphur-coloured sulphureus and the delightful, rich-yellow, sweet-scented "Canary-bird," or the fine variety called superbus, which has rich orange-yellow-coloured flowers with bright scarlet stigmata. All are beautiful, and to the flower-lover longing for the appearing of his favourites, they are charming in the extreme. *S. Arnott, Carsethorn-by-Dumfries, Scotland.*

THE SPECIES OF EREMURUS.

(Concluded from p. 133.)

E. robustus Elwesianus.—The best Eremurus, and a stately and reliable border plant withal. The root-stocks are extremely large, the roots thick and fleshy, coloured brick-red, the resting crowns very large, not conical but semi-spherical —a character I use frequently to determine this variety from E. robustus—and the rooting system covers a square yard. The leaves are very broad, deep-green, 2 to 3 feet long, sub-erect, never drooping unless damaged, and the spikes appear when the leaves are nearly developed, reaching a height of 10 to 12 feet, the upper third furnished with rose-pink flowers each 1¼ inch across, the anthers orange-red, and the ovaries yellowish. The spikes are very symmetrical, tapering a little at the top, whilst in E. robustus they are nearly cylindrical. As the two plants are often confused, I will briefly note that Elwesianus differs from robustus in the semi-spherical, not conical crown, in the descending, not ascending roots (those of robustus ascend for 2 to 3 inches then descend or spread horizontally) in the rigidly-erect leaves, which do not droop at the tips, and in the tapering spike of deeper-coloured flowers. It is the best of the pink-flowered forms of Eremurus, and the root-stocks grow to an enormous size without breaking up or forming more than one crown. It appreciates a liberal soil, but no manure should be placed near the roots. A mulch of decayed manure is helpful as a surface dressing in summer.

E. "Shelford" (E. Bungei × Olgæ).—A very beautiful hybrid, of sterling worth, and just mid-way between its parents in every respect. The rooting system is that of Olgæ, the leaves those of Bungei, whilst the graceful inflorescence is coloured bronze, copper, and bright yellow in an effective and richly-toned blend. The exteriors of the shell-like petals are darker than the inner, whilst the anthers are reddish-tinted, as in Bungei. It was raised at Great Shelford by Sir Michael Foster, and it has already won unstinted admiration, the graceful spikes possessing the good attributes of either parent. It is not harmed by frosts, unless the spikes happen to be half a yard high, when severely cold winds cripple them.

E. Warei (hort. *Reuthe*).—A very beautiful plant from Turkestan, and a great rarity, now finding its way into general cultivation. The root-stock is slender, developing quickly from the seedling to flowering size, becoming finally 18 inches across; the roots thin and black, the crown slender and conical. The leaves are glaucous, very narrow, and persistent till autumn, appearing shortly after the new year, and growing through all weathers without taking much harm. The flower-spikes are slender, 6 to 7 feet long, clothed for one-third of their length with cup-shaped flowers, coloured a bright tint of salmon internally, purplish externally, the outer colouring showing through on the inside, so that a tint of magenta is produced. Seeds germinate well and freely, and it will not be long before this grand Eremurus becomes common. Hybrids between this and other species show great vigour and an extended colour-range. I have heard of plants producing spikes 9 feet long, and it is probable, in a light and sandy soil, to exceed even this. It does not succeed in heavy loam, and even on light soils it prefers to be elevated. E. "Mrs. Reuthe" is a hybrid between this species and turkestanicus, with the habit of Warei. The flowers are borne on slender stems, and are coloured deep sulphur-yellow; the anthers—a very beautiful feature—are coloured orange-red, reminding one of Cimicifuga in their dense array.

Curious Species of Botanical Interest.

E. Kauffmanni (Regel).—A curious species from Turkestan, more closely allied to the Asphodels than any other species. The roots are much thickened, and not more than 6 inches long, the crown conical and small. The spikes average 5 feet in height, and bear dull-coloured purplish-bronze flowers three-quarters of an inch across each, and not more than one-third of the spike is covered with flowers. The capsules are very distinct, being wrinkled and ascending. It increases fast at the root, and seedlings are not difficult to raise. It has no great garden value, and is only grown as a curiosity.

E. turkestanicus.—A dull-coloured species that differs but little from E. Kaufmanni. The roots are a foot across, the flowering crowns conical and generally in pairs, the leaves glaucous, an inch or two wide, and 2 feet long; the flower-spikes are 2 yards high, bearing along half their length quantities of purple-tinted flowers of comparatively small size, the exteriors of the petals being heavily keeled and chocolate-coloured. The seed-vessels are ruddy tinted, have hard rugged exteriors, and the pedicels ascend so that the capsules touch the stems. Grown as a curiosity only, but obviously a useful parent species, in that it has given us a splendid hybrid in E. Mrs. Reuthe. It will grow well anywhere, and increases very freely.

Other species that may be appreciated in a collection are E. spectabilis, a yellow-flowered species closely allied to the preceding; and E. altaicus, a curious species bearing dusky-yellow flowers of poor worth, compared with many others. It is a free-flowering plant. *G. B. Mallett.*

FRUIT REGISTER.

APPLE LORD BURGHLEY.

Of good dessert varieties at this season of the year that known as Lord Burghley succeeds remarkably well in our stiff cold soil. We have one small tree which invariably crops well. The fruits are of satisfactory size, with dull red colouring on the sunny side, and of good quality considering the late season. They keep well, and the skins do not shrivel as they do in most of the late kinds here. I should like to know how the variety succeeds in other northern gardens. I very seldom see its name mentioned, and am inclined to think the variety is not much grown. *J. Easter, Nostell Priory Gardens, Wakefield.*

Some Lesser-known Apples.

Perhaps in our anxiety to obtain new varieties we sometimes cast aside some of our old meritorious fruits, flowers, &c., to make room for something which, after trial, does not excel the old ones. This I am inclined to believe is what is happening with respect to the Apple.

Many individuals are interesting themselves in the production of new Apples, which, if not officially recognised by the Royal Horticultural Society, are still grown by the raisers, and add bewilderment to the already perplexing list.

When collecting specimen fruits for the late Dr. Hogg and Dr. Bull, as they were compiling that beautiful work, *The Herefordshire Pomona,* I had excellent opportunities of examining some of the varieties I am about to mention. These Apples are much valued locally, and with the same care bestowed upon them that is given to many other kinds generally cultivated, they would prove valuable. Isolated as some varieties are in one district, with no one enterprising enough to push them, they are seldom heard of; several of their number have, however, been brought to light and are found in catalogues. Crimson Devonian is one of the highest-coloured Apples grown; it is a heavy cropper and a strong grower. Caldwell Improved is one of the best of kitchen fruits, keeping well until March. It is a good hardy grower, well suited for cold districts. Then there is our old English Codlin, perhaps one of the oldest Apples grown; as an early or midseason Apple I should include it in a collection; its cropping qualities are regular and good. All who grow Apples for exhibition should secure Bodenham Beauty, a fruit of the first size, and equally good for dessert or kitchen use, keeping in good condition until March. British Queen resembles in appearance Blenheim Pippin, but is not equal to it in flavour. Allen's Everlasting is somewhat better known, and is esteemed on account of its late-keeping qualities and excellent flavour.

Only in a few districts, particularly in Norfolk, is Dr. Harvey grown. That it is extensively cultivated in that county is sufficient proof of its hardiness; it is grown chiefly for market purposes. Coker's Beauty is a very handsome Apple, somewhat after the type of King of the Pippins. This Apple, although awarded a Certificate at the Guildhall fruit show, seems to have sunk almost into oblivion.

Lord Burghley (see above), certificated in 1865, is not grown nearly enough, its merits as one of the very best late dessert kinds have only been discovered by a limited number of growers. I have seen it in good condition in May and June; but it is not a kind I should recommend to be planted extensively as a standard. Monmouthshire Beauty is a very pretty Apple, of good quality, and keeps well until January; I have an old tree growing in an orchard, and it seldom fails to carry a crop: it is useful either as kitchen or dessert fruit.

A very old favourite in Herefordshire is Pineapple Russet, highly appreciated on account of its peculiar aroma and soft rich flesh; in some localities it is known as Pomeroy. Tewkesbury Baron is another very highly-coloured Apple, surpassing in appearance and cropping qualities many of our better known sorts, and when well grown is valued highly; it is an ideal Apple for exhibition, but the fruits are not of large size.

The Apple orchards in different counties, which I have seen personally, in Herefordshire, Worcester, Somerset, and Devon, contain many meritorious seedlings at the present time. In many instances these have been produced from the Cider "cheese," or experimentally raised from the pip of some favourite variety. Often have I been shown Apples so produced bearing a local name, and possessing first-rate flavour. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

CULTURAL MEMORANDA.

CALADIUMS.

FEW plants surpass these for decorative effect from April to September in the warmhouse by reason of the brilliant colour and rich marking of their leaves. Provided the plants are well established and are suitably hardened, an ordinary greenhouse will meet their requirements from midsummer onwards, but it is necessary to place them where they will not be subjected to the influence of cold draughts, and they must be very carefully watered. The season for repotting and, if necessary, for increasing the stock of these plants is now at hand. As the bulbs are taken from the pots each one should be carefully examined, removing any decayed portions that may be present, and should it be desirable to increase the stock, each piece having a growing shoot should either be pulled or cut off with a knife. The cut surfaces should be sprinkled with fine silver-sand before placing the cuttings in quite small pots containing a light soil composed of equal parts loam, leaf-soil, and peat. A sprinkling of sand should be placed under each cutting, which should next be covered with soil. A sprinkling of sand on the surface finishes the potting. The pots should be plunged in a bottom-heat of about 75°, and allowed a day temperature of from 65° to 70°. They will soon commence to grow, requiring very little water except a light spraying from the syringe twice daily. It is advisable to keep the plants near to the glass roof, especially the small-leaved or dwarf varieties, which otherwise would quickly become drawn, thus losing half their decorative value. Although these plants enjoy light it is necessary to apply a thin shading during the brightest part of the day throughout the summer months. As the pots become full of roots transfer the plants to pots of a larger size, an 8-inch size being sufficient for the requirements of specimens of the stronger-growing varieties, while for the charming variety argyrites, 4 or 5-inch pots are of ample size. For the final potting the compost should be coarser in texture, with a small quantity of horse droppings added, and coarse silver or river-sand used in place of the finer sand previously advised. As growth advances and the roots of the plants protrude, weak liquid manure may with benefit be given on two or three occasions each week, that prepared from sheep or from deer-droppings proving excellent for the purpose. Named varieties are now endless, but growers in search of a varied collection cannot do better than visit the Temple Show at the end of May and see the grand exhibits staged by several of the London nurserymen who make a speciality of these plants. *J. Mayne, Bicton Gardens, Devon.*

THE VILMORIN MEMORIAL. — The sums received or promised now amount to £1,289, the number of subscribers being 3,112.

SPIRÆA BRACTEATA.

OUR illustration (fig. 61) shows a flowering spray from Kew of this very pretty white Spiræa, reproduced from a photograph by Mr. Raffill. It is one of the most desirable of hardy Spiræas, and is useful for forcing purposes. Whilst there is happily no question at all as to the value of the plant, there is very considerable doubt as to what name it should bear. It appears that there is a Japanese plant, and there is another shrub that grows in Austria and Southern Russia. The two are so much alike that it is difficult to tell them apart. Some botanists therefore consider them as separate species; others look upon them as constituting one species extending from Southern Russia through Amur Land to Japan. We cannot pretend to decide the point, but we may add that on February 25, 1885, the Japanese form was figured in our columns, and described by Mr. Nicholson as S. media rotundifolia alba (fig. 62). On June 16, 1894, Mr.

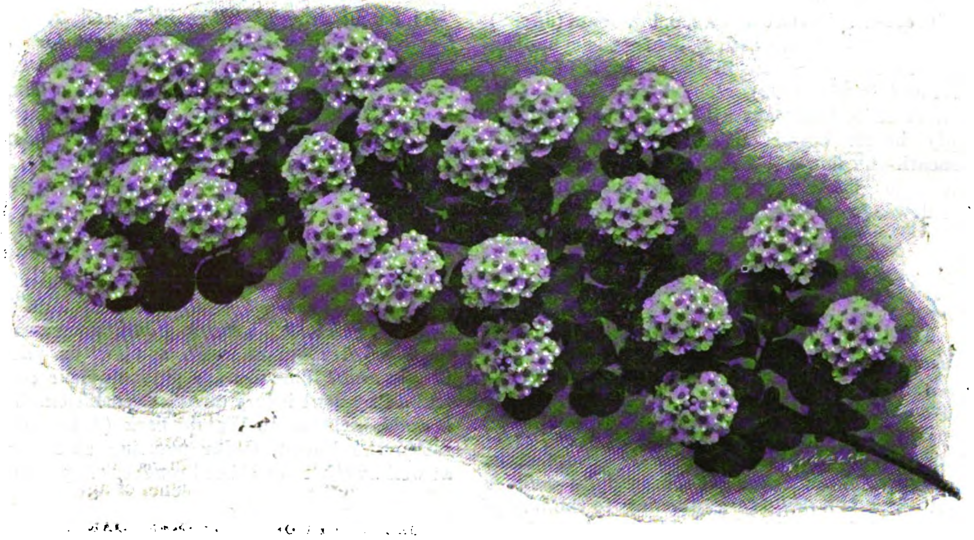


FIG. 61.—SPIRÆA BRACTEATA FROM KEW.
(*Photograph by C. P. Raffill.*)

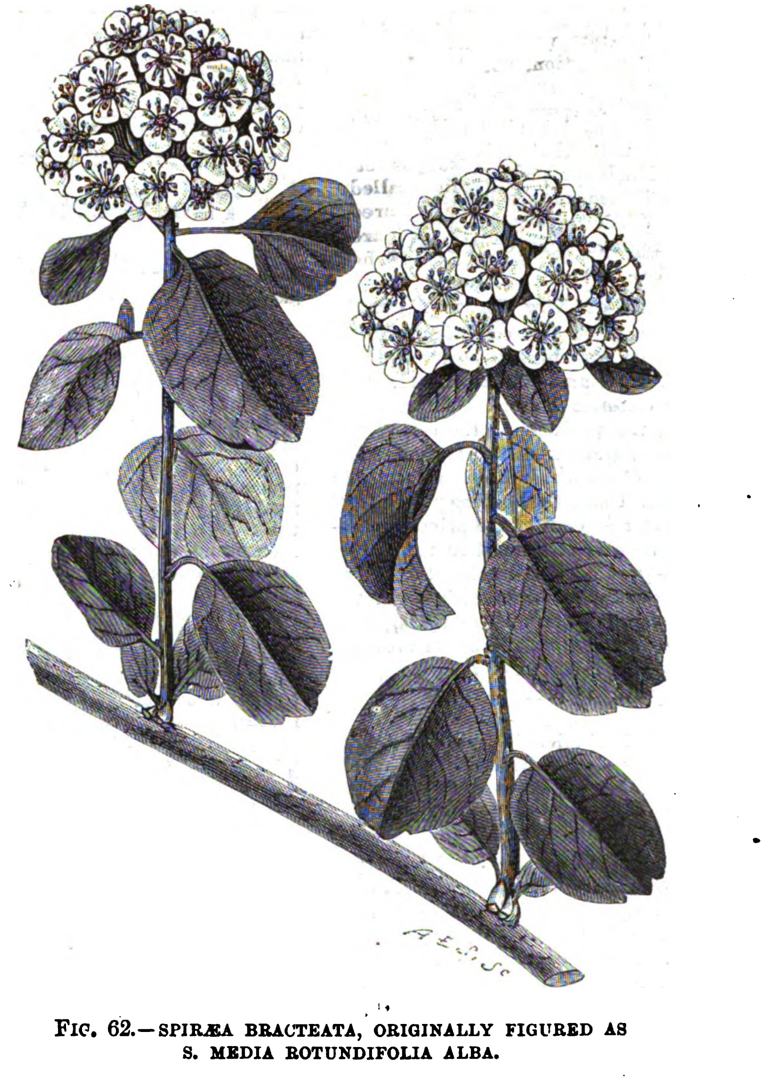


FIG. 62.—SPIRÆA BRACTEATA, ORIGINALLY FIGURED AS S. MEDIA ROTUNDIFOLIA ALBA.

Hemsley descanted in the *Gardeners' Chronicle* on the Japanese shrub, which he called bracteata, and said that the name media was erroneously applied to it. It was again the subject of a note on July 6, 1895, p. 22. In the same year a figure was given of the Japanese plant in the *Botanical Magazine*, t. 7429, where the flowers are shown of a greenish-white colour. The two species, S. bracteata (Japan) and S. media (with which S. confusa is synonymous), are kept separate in the *Kew Hand-List of Tree and Shrubs* (1902). The distinguishing characters of S. bracteata are to be found in the leafy bracts borne on the flower-stalks just beneath the flowers, as shown in fig. 62, and in the large glands projecting into the interior of the flower from the edge of the calyx-tube.

COLONIAL NOTES.

HORTICULTURE IN CAPE COLONY.

A Congress of the horticulturists of the eastern province of Cape Colony was held on November 22 at East London. The executive reported an increased interest in horticultural matters throughout the whole of the eastern provinces. They were encouraged to believe that there is a genuine awakening to the importance and far-reaching possibilities of the fruit-growing industry of the eastern province of the Cape Colony.

"The Transvaal Agricultural Journal."

We have received the January number of the *Transvaal Agricultural Journal*. The contents include papers on The Evolution of the Plough, Government (Forestry) Plantation at Gemsbokfontein, Pan, and many botanical and horticultural notes. We note that this quarterly is illustrated with handsome plates, some of which are photographed from nature by the Government Printing Works three-colour process, and are wonderful reproductions of the fruit and insects represented.

"The Year-Book of New South Wales."

This is the record of the conditions during 1904 of the various government departments, of military, naval, legal and similar affairs. The pamphlet also contains historical information, with reports on the products of the colony, the conditions of immigrants, and a gazeteer. The booklet is in fact of great value to all interested in New South Wales. Under the heading "Forestry" are important notes on each of the principal timbers, while the flora is mentioned in the section devoted to geographical characteristics. The agricultural industry is dealt with from the standpoint of the new arrival, and the most profitable crops are suggested. Sugar-growing, viticulture and other branches of agriculture are also discussed with respect to their relative importance.

The Year-Book is obtainable from the Agent-General (for New South Wales), in London, Westminster Chambers, 9, Victoria Street, Westminster.

Elæocarpus.

I have noted the fine plate of Elæocarpus cyaneus in the *Gardeners' Chronicle* for October 15. By the way E. reticulatus, Sm., is older than E. cyaneus, Ait. It is a small tree, very common about Sydney. The fruits are of an intense Prussian-blue colour. I have never seen them purplish-blue as in your specimen; also the flowers are pendulous when growing wild. It might be worth while to have your specimen examined at Kew to see if it is a variety or an allied species. *J. H. Maiden.*

"Forest Flora of New South Wales."

The thirteenth part, issued in 1904, contains figures and descriptions of Eucalyptus sideroxylon, Aphanthe philippinensis, a tree allied to the Elms; Casuarina lepidophloia, and Heterodendron oleæfolium (Sapindaceæ). The descriptions are by Mr. J. H. Maiden, and include notes on the economic uses of the several trees.

"Report for 1903 on the Botanic Gardens and Domains of New South Wales."

The long drought broke in March, 1903, and the year, on the whole, was the best for years. The good season was by no means confined to the coastal districts. Much good work was done in connection with the National Herbarium and Botanical Museum. As regards the gardening work of the several local establishments, Mr. J. H. Maiden reports that they are well kept and reflect credit on the respective staffs."

Agricultural Notes from Queensland.

The December (1904) issue of the *Queensland Agricultural Journal* contains much that is of interest. Mr. A. Benson gives diagrams for improved fruit-cases, with a view of packing Grapes and Plums so as to prevent their contact and consequent injury during exportation. There are also articles on Wattle bark (Acacia decurrens), the Forest, Cedar planting at Atherton, as well as others on other branches of agriculture.

"Annual Report of Government Gardens and Parks in Mysore for 1903—1904."

The season was abnormally wet. Annuals suffered to some extent, but otherwise growth was good and profitable. A piece of a letter signed "Ed. Clive, First Assistant, Political," and dated Fort William, the 24th April, 1819, was recently found and presented to the establishment. It is of interest as dealing with the early history of the Mysore Gardens.

The Week's Work.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

The Orchard-house.—The most forward trees in this house will now be approaching (if they have not already reached) the flowering stage, owing to the fact that all fruit-trees under glass this season are in a very advanced condition. Daily attention must be given to the requisite watering of the trees, and especial care in watering will be necessary in the case of those trees that have been freshly top-dressed, seeing that the soil beneath the top-dressing and which contains the active roots is not allowed to become dry, although the surface-dressing appears moist enough. Maintain suitable atmospheric conditions by damping the paths and other available spaces and by lightly syringing the trees overhead on bright days. The night temperature should not exceed 50°, while the day temperature should not be allowed to rise above 65°. Apply ventilation freely in favourable weather. A little ventilation should always be allowed through the top and side ventilators, excepting in very cold weather. Fumigate the house lightly on two occasions before the trees expand their flowers. This is especially necessary in those orchard-houses in which Strawberries have been grown. Avoid having too much atmospheric moisture during the flowering stage, and allow a little heat in the pipes both during the night and the day. Extra heat given early in the morning with plenty of ventilation will greatly assist the setting of the fruit. Peaches and Nectarines set their fruits freely in orchard-houses, but Pears, Apples, Cherries and even Plums are more shy in this respect, and will well repay any extra attention given them. A dry atmosphere is essential for the free setting of these latter fruits, whose flowers must be pollinated daily with a soft brush. Disbudding and pinching the trees must be attended to as often as it becomes necessary in order to encourage an equal flow of sap through the whole tree.

Young Vines that were rooted in small pots as recommended in a previous calendar, will now be ready for shifting into 6-inch pots. See that the latter are made clean before they are used, and that the compost, which should be on the dry side, is suitably warmed. It should consist of rough fibrous loam with a sixth part lime rubble and wood ashes, and a good sprinkling of bone-meal added. When potted place the Vines in a bottom-heat of 75° to 80°. "Cut backs" will now be ready for the final shift into 12-inch pots. The Vines should be watered before being potted, in order to ensure the "balls" being moist. The pots should be clean, well crocked, and the potting process carefully carried out. When potted plunge the pots in a steady bottom-heat until they have well rooted through the soil, after which the bottom-heat should be gradually discontinued. Water should be used sparingly at the roots but maintain a somewhat close, moist atmosphere until the plants are well established, by lightly syringing and damping the paths.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Lælia anceps and its varieties. — The typical forms of this species will now begin to emerge from the resting stage, and be sending out new series of roots. The necessary potting operations should be attended to immediately these develop. If the plants are to be suspended, let them be put into teak-wood baskets. Pieces of crocks should be placed on the bottom bars, and the plant should be fixed in position with good lumps of fibrous peat and sphagnum-moss, used in the proportion of two parts of the former to one part of the latter. In making up new specimen plants remove useless back pseudo-bulbs, and so arrange the pieces that their growing points are toward the centre of the pot. Place the potting material well up to the bases of the last-developed pseudo-bulbs, but do not use more of the compost than is necessary. If pots or pans are used, a larger quantity of drainage material should be allowed, and the surface of the potting medium finished off in a mound. L. Dawsoni, L. Sanderiana, L. Schroderiana, and others of this section thrive best in baskets, and usually produce floral scapes more freely from those growths that project over the sides of the receptacles. When such growths project beyond reasonable limits they should be cut off, and the pieces thus severed made up into new specimens, leaving the old growth to "break" again from lateral buds. Where a separate compartment is not available for Mexican Lælias, the plants should be placed in the lightest and most freely ventilated section of an ordinary Cattleya house. Water must be applied sparingly until the season is well advanced, and nothing should be done to induce the plants to make early growth, for the later in the season the new growths develop the more likely the plants are to flower successfully. Very little shade should be afforded the plants in order to allow them the full benefit of natural sun-heat, as artificial heat should be only applied when the atmospheric temperature recedes to 55°. Spraying overhead and damping between the receptacles should be done as often as is necessary to promote sufficient atmospheric moisture to counteract the drying influences entailed by free ventilation.

Catasetums, &c.—Few of these Orchids are of much horticultural importance, the most valuable being C. Bungerothii. As soon as the young growths of this and of other species are about an inch in length the plants should be set in order for the season, and, as the roots seldom survive for more than one year, annual potting is the best plan to adopt. Use pots or pans in which to suspend the plants, making them three parts full with drainage material. The rooting medium may consist of fibrous loam, peat and sphagnum moss in equal proportions, adding a good sprinkling of sand and small crocks. Place the plants in a light part of the stove, and afford little or no water for several weeks afterwards. Whenever water is applied see that none lodges between the growths. It is only when the the bulbs are nearing their limit of growth that a generous supply of water is needed. A compost of which decaying Oak-leaves form a part appears to suit these Orchids and the members of the two following genera, viz., Cycnoches and Mormodes. When this material is used afford the plants a greater depth of compost, and apply a smaller quantity of water to the roots. Cycnoches chlorochilon, the "Swan Orchid," should be grown under the same conditions as the Catasetums, but the species of Mormodes that are commonly cultivated should receive Mexican-house treatment, or be given a place on a shelf in the Cattleya-house. The older roots of Mormodes survive for a season or two, hence annual potting should not be practised in their case, it being generally sufficient if the old surface materials are replaced by new.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Souvenir de la Malmaison Carnation.—To grow these plants perfectly it is necessary to have glass structures devoted entirely to them. If suitable varieties be selected flowers can be had from February onwards. Two varieties, Baldwin and Valetta, may be relied on to yield a number of flowers in this month, but two-year-old plants should be grown for the purpose. To attempt to force "Malmaisons" into bloom is generally to court failure, and only those varieties that have a tendency to produce their flowers early should be tried. During the winter months the atmosphere must be kept dry, the plants themselves allowed to remain on the dry side, and overhead syringing should be strictly avoided. Allow a circulation of air between the plants at all times. A temperature of 40° to 45° by artificial heat will be sufficient under these conditions. The "rust" fungus may be stamped out entirely if care be taken to remove all affected leaves with a knife or scissors. As the days become longer the floors and stages of the house should be damped down frequently, and the plants be afforded more water at the roots. Appearances of red spider should be checked in good time by applications of "Veltha."

Border Carnations.—My practice is to have a number of these layered over and above what are required for planting out, in order that some may flower in pots in May. They should be layered in July, and when the layers have made roots, they should be potted into 5-inch pots in a moderately rich soil. Shade them from the hot sunshine for a few days, but not afterwards. Let the plants stand in cold frames during the winter, protecting in very severe weather, but not coddling them. In February remove them to shelves near the light in late Peach-houses or similar structures, and let them develop gradually; very fine flowers may then be expected in May.

Hippeastrums (Amaryllis).—Let bulbs that have laid dormant through the winter be shaken out of their old soil and re-potted, as advised in a previous Calendar. There is no occasion to plunge them in tan or any other material, but place them "pot thick" on a cool base and syringe them occasionally. An atmospheric temperature of 55° by night will be suitable. Admit a little air during the day in bright weather, but close the house before the sun loses its power. As soon as seedlings are large enough to be handled pot them up and place them on shelves near to the light in a hot atmosphere. Seedling bulbs should not be dried off until after they have flowered.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Filberts and Cob Nuts.—Now that the female blossoms have expanded, pruning may be done without fear of removing too many of them. All bushes should be grown on single stems. Suckers must not be permitted to develop. As the nuts are borne on twigs and spurs, pruning should be carried out in such a manner as to produce these. Strong growths should be shortened during the summer, and the subsequent side growths should be pinched to about six leaves. Where trees are grown as bushes or shaped as cups, any growths that will not be required should now be removed, the extension shoots and spurs shortened back and well thinned out if overcrowded. Only over-tall trees should be cut severely, because close pruning produces strong, unfruitful wood. If male catkins are few, as is the case here, branches may be cut from other trees where they are plentiful and be fixed above the trees in such a manner that the wind may distribute the pollen; or Hazel branches will answer the same purpose. Shy-fruiting varieties may be grafted at the present time on weak-growing stocks, which will in some cases induce fruitfulness. The husk of a Cob-nut is shorter, but that of a Filbert longer than the nut.

Protecting Apricot Blooms.—Many trees growing against warm walls of dwelling-houses and outbuildings are commencing to open their blossoms, so that adequate means must now be taken to protect the flowers. They only need protection from frost, and will set their flowers in a very low temperature, therefore the protecting material should be removed from the trees when there is no frost or cold wind. The practice of tying Spruce branches, Yew and Laurel shoots to the trees is a good one, but double or treble fish-netting, tiffany or hexagon netting is more portable and more convenient. A simple means of covering the wall is to roll the material round a pole, fastening it to one end of the wall first, unrolling it, and lightly hanging it on nails at the summit of the wall at the same time; a considerable length can be quickly covered and uncovered in this way. If there is no ccping to keep the material from the trees, poles standing from the top of the wall to the ground are necessary for this purpose. Do not entirely dispense with the covering until there is sufficient foliage to protect the young fruits.

Recently-planted Trees.—All trees planted against walls during this season should now be quite settled in the soil, and may be nailed or tied to the wall. They should be pruned as was advised in a previous Calendar.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Montbretias require a warm aspect, deep, sandy soil, and thorough drainage. Plant the corms in irregular masses, putting them 3 inches deep and 6 inches apart from each other, Such space will allow them to increase if undisturbed for several years. As soon as the plants become overcrowded they will flower less satisfactorily. Upon signs of this lift the corms and transplant the finest, or lift the central patch out with a fork. Amongst the many fine varieties are Golden Sheaf, and Etoile de Feu. They require protection in severe winters by covering them slightly with litter, ashes, or Cocoa-nut refuse.

Bedding Plants.—Plants of Fuchsias, Heliotropes, Aloysia citriodora, and of Plumbago capensis that are used in summer bedding should be pruned and placed in gentle heat in order that they may break into growth. Abutilons that were rooted during last autumn should be given a shift into larger pots. Such varieties of Ivy-leaf Pelargoniums as Souvenir de Charles Turner and Madame Crousse that were placed in 5-inch pots and wintered in a cool-house will now require attention in the matter of staking and tying in order to train them into suitable sized plants for growing as pyramids and as pillar plants. Dahlia tubers should be placed in heat in order that they may make growths to be used as cuttings for propagating purposes. Salvia patens should be treated in a similar manner if it is desirable to increase the stock. Seeds of either may be sown if desired. A sowing of Sweet Peas should now be made in 6-inch pots, placing six or eight seeds in each pot. Stand the pots in a cold frame, and maintain a close, moist atmosphere till the seeds have germinated, when ventilation should be employed in favourable weather. Seedling Hollyhocks should be potted as soon as they are large enough to handle. Place them when potted in a light position in the forcing-house, and when they have established themselves in the new soil remove them to a cooler structure, and one in which ventilation can be freely applied. Seedling plants of tuberous-rooted Begonias should be "pricked-off" when ready. Seeds of Lobelia speciosa, Golden Feather (Pyrethrums), Gaillardias, Iceland Poppies, Salvia Horminum grandiflora violacea, S. splendens, and Œnothera taraxacifolia should be sown in boxes and placed in a moderate degree of heat. Store stock plants of Lobelia compacta that have not been allowed to flower will now have plenty of young, sturdy growths suitable for propagating as cuttings. Half-fill a shallow box with sand, dibble in the cuttings, and then place the box on a hot-bed. Cover the box with a sheet of glass until the cuttings are rooted, when a lower atmospheric temperature must be given in preparation for their final shift into boxes. Alyssum, Verbenas, &c., should be propagated in the same manner.

Shrubberies.—Strong-growing shrubs require judicious pruning in order to keep them in good shape. Remove any "suckers" that may be present on hybrid Rhododendrons which are not upon their own roots. Mulch newly-planted trees and any others that require it with well-rotted manure. Andromeda floribunda, whose spikes of white flowers are now beginning to open, does well in a sheltered situation and in a peaty or loamy soil.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Onions.—Sow seeds of this important crop in the middle of the month. Little difficulty will be experienced in breaking up the soil, levelling it, and making it firm by treading, if this was turned up roughly early in last autumn. If the soil was well dusted with lime last month, soot should now be applied previous to raking the surface and drawing the drills. When the soil is in a dry, favourable condition, sow the seeds thinly, covering them lightly by means of the feet, having one foot on each side of the drill; and afterwards rake the surface down fine. Seedlings raised from seeds sown in August should now be thinned carefully to 9 inches apart, using the hand-fork. If the thinnings be lifted carefully and planted firmly 1 foot apart each way in mild, showery weather, these plants will make better bulbs even than those which are left standing, and they will keep for a longer time in good condition. This applies especially to such varieties as Ailsa Craig, Giant Rocca, &c.

Turnips.—Sow seeds of the varieties Early Milan and Early Snowball on a south border or other sheltered position where the soil is of a light nature. Let the drills be made 9 inches apart and 1 inch deep. Sprinkle the surface with soot when the young plants appear. These plants will succeed the variety Carter's Early Forcing now growing in frames, and which require free ventilation and frequent root waterings.

Spring Cabbages.—Dust over the surface of the ground with soot before hoeing is done. See if later plants have been loosened by frost; they need to be moderately firm in the ground. We are pricking off seedlings from the first sowing, and making another small sowing of the variety Carter's Model.

Lettuce.—Fill up any blanks in autumn-made plantations by taking plants from the store-beds. Hoe the surface of the ground frequently. Of the plants that have been wintered in frames, three-fourths may now be planted in sheltered positions out-of-doors. Those remaining will soon be fit for use. A good selection of "Bath" or "Brown Cos" stand the winter well, and are excellent in quality. We are pricking off seedlings from the first sowings of Superb Cos and Perfect Gem. Make sowings out-of-doors at intervals of twelve or fourteen days. It will save time if the seeds be sown thinly where the plants are to remain. Especially should this be done on light soils or during periods of heat and drought.

Celery.—We make our first sowing in heat in the second week in March, and about a month later we sow seeds in cold frames for the general and later crops, employing rich but sandy soil. Standard Bearer is the variety chiefly relied upon, of which at the present time we have a good supply here.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	MAR. 13	United Horticultural Benefit and Provident Society, Annual Meeting at Caledonian Hotel, Adelphi, London, at 8 P.M. Birmingham Mutual Improvement Society's Meeting.
TUESDAY,	MAR. 14	Royal Horticultural Society's Committees Meet. National Rose Society's Committee Meeting.
THURSDAY,	MAR. 16	Linnean Society's Meeting.

SALES FOR THE WEEK.

MONDAY NEXT—
Hardy Border Plants, Azaleas, Roses, Perennials, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY, NEXT—
Azaleas, Palms, Lilies, Roses, Fruit Trees, Herbaceous Plants, &c, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—898 cases Japanese Liliums, Maples, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 3 o'clock.—Roses, Azaleas, Lilies, Gladioli, &c., at Stevens' Rooms, at 12.30.

FRIDAY NEXT—
Herbaceous Plants, Perennials Lilies, Begonias, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—2,100 Vanda cœrulea, 3,500 Odontoglossum crispum, Lælia autumnalis atro-rubens, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —42·4°.

ACTUAL TEMPERATURES :—
LONDON.—*Wednesday, March* 8 (6 P.M.): Max. 51°; Min. 38°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 9 (10 A.M.): Bar., 29·6; Temp., 51°. Weather—dull, with occasional showers.
PROVINCES.—*Wednesday, March* 8 (6 P.M.): Max. 50°, Land's End; Min. 44°, E. Coast of England.

British Gardeners' Association. THERE is now evidence to show that the working gardeners of this country are at length recognising that it is better to combine for purposes of co-operation and mutual assistance than to remain, as heretofore, disjointed units. The meeting at the hall in Essex Street, Strand, in May last, at which the Association was initiated, was practically unanimous in principle. Some points of detail were objected to, but these, as we pointed out at the time, could be readily adjusted when the Committee got to work. The first thing to do then was to replace all the talk and writing of previous years by some scheme which should ensure practical application of admitted principles. This was done, and then came the proposal that when a body of 500 gardeners had signified their adhesion, the preliminary organisation, or Committee of Selection, should be superseded by a Council elected on broadly representative lines, and that this Council should proceed to carry out, as far as circumstances should permit, the objects for which the Association was founded. Meetings have since been held in various parts of the country, explanations have been afforded, difficulties have been removed, and now the Association is in a condition to begin active work. Convinced by long experience of the necessity for improving the position of the gardener, and of raising him to a status more in accordance with the intelligence and the forethought expected of him, and the responsibility he has to assume, we rejoice at the formation of the Association, and we can but feel that if it be judiciously guided by the governing body the benefit to gardeners will be great, whilst the employer will have a guarantee that the man he takes into his service has really something to show that he is what he pretends to be—a gardener. If unfortunately evil counsels prevail, a circumstance we do not in the least anticipate, the Association will collapse. Justice and liberty between man and man, co-operation for the common benefit, can but lead to good results all round. Matters, as we have said, have arrived at such a stage that the Executive Council can be elected. We cannot too strongly urge the exercise of the greatest care in the selection of the most fitting men; nor can we over-rate the responsibilities which will fall on the Council in the execution of their task; but knowing what the leading gardeners are, and how they will rise to the level of their opportunities, we can but look forward most hopefully to the results of their deliberations. The following document has been forwarded to us for publication, and in the interests of gardening and gardeners we gladly give insertion to it :—

"At a Committee meeting held on March 3 it was decided that 500 gardeners having now joined the Association, the election of the Executive Council should be proceeded with. The Council will consist of twelve members who live within easy reach of London, and a representative of every Branch with not fewer than fifty members. To enable all [members] to take part in the election of the twelve, a list of those who are willing to serve on the Council will be posted to every member, who will be invited to mark the names of those he prefers, and the twelve who obtain the highest number of marks will be considered elected. This arrangement appears to be the only workable one that would give satisfaction. The selection of candidates will be representative of all sections of gardening, but the majority will be gardeners employed in private establishments. Gardeners who have not already joined the Association are urged to do so at once, and thus secure the right to take part in the election of the first Executive Council.

Candidates for membership are requested to apply to the secretary of a branch, should there be one near, but those who prefer it may apply direct to headquarters. The expenses of public meetings held in different parts of the country are as a rule provided locally, the fund for the promotion of the movement being too small to do more than help to pay the delegates' expenses. The Committee would be thankful for further help in the shape of donations to the Expenses Fund.

It was also decided to secure an office in London and to engage a permanent secretary as soon as possible.

Up to February 28 the membership amounted to 504. Of this number 211 are head gardeners, 26 'single-handed' gardeners, 183 journeymen gardeners, and 80 various. These are thus distributed: South of England 271, North of England 91, Scotland 42, Wales 78, Ireland 12, Colonies 6.

Meetings have been held in twenty-three gardening centres, including Birmingham, Leeds, Sunderland, Plymouth, Exeter, Bournemouth, Reigate, Swansea, Cardiff, Altrincham, the Isle of Wight, &c., and branches have been established in seventeen districts. Suggestions for holding public meetings from gardeners who are willing to help will be gladly received by the Secretary.

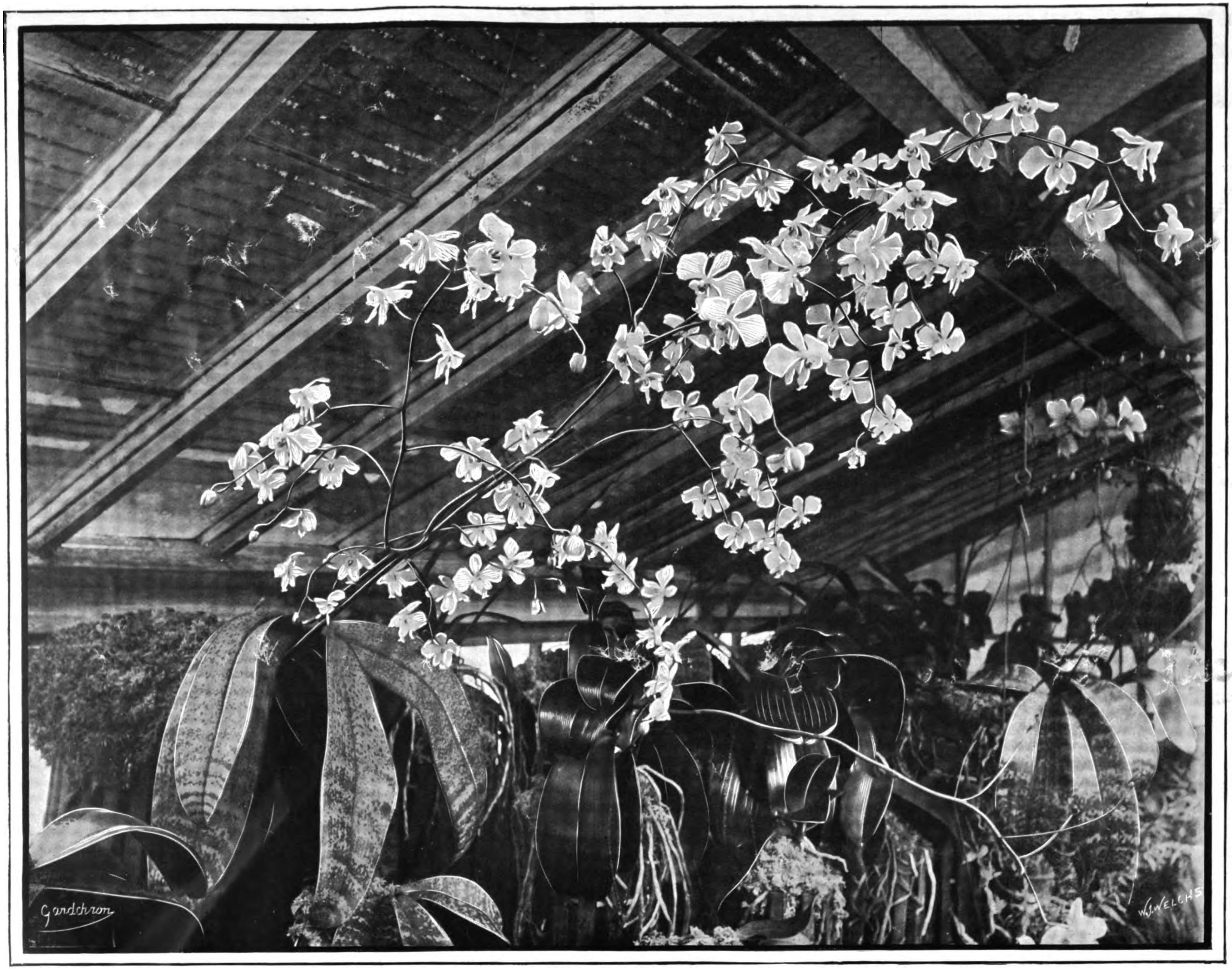
STATEMENT OF ACCOUNTS.

Receipts :—			
Donations to Expenses Fund ...	£65	6	6
Entrance Fees and Subscriptions	126	0	0
	191	6	6
Expenditure :—			
Printing, Stationery, Postage ...	37	15	0
Expense of Meetings	14	10	0
Sundries	0	11	11
	52	16	11
Deposited with Bankers ...	138	0	0
Cash in Hand	0	9	7
	138	9	7
Donations promised	81	0	0

W. Watson, Secretary (pro. tem.)."

PHALÆNOPSIS SCHILLERIANA (see Supplementary Illustration).—The enormous specimens of Phalænopsis which have been in the collection of the Right Hon. Lord ROTHSCHILD at Tring Park (gr., Mr. ARTHUR DYE) for many years have been frequently remarked upon in these columns. This year the show of flowers was even better than previously, and the plants were so fine that on January 9 photographs were taken, one of which, by the kindness of Lord ROTHSCHILD, we are enabled to reproduce in our Supplementary Illustration to this issue. The largest plant of Phalænopsis Schilleriana was purchased at the dispersal of the Burton Constable specimens in 1881, and this winter it bore a spike with seven main and eleven secondary branches, having in the aggregate ninety-nine flowers, each of which measured from 3 to 4 inches across, the largest leaves being 15½ inches long and 5½ inches wide. Other plants also finely flowered had eight or nine leaves each, the largest leaves being 15 by 6 inches. The original plant of Phalænopsis intermedia Portei, purchased about thirty years ago, has again produced a great profusion of rose-tinted flowers. The specimens of P. Stuartiana have flowered well, the handsome P. Stuartiana nobilior and punctatissima being among them. At present the large specimens of P. Aphrodite and P. amabilis are fine, and P. Sanderiana and the pretty little P. Lowii, which blooms regularly at Tring Park, are promising well for flower. There seems to be little trouble occasioned by these plants at Tring Park, where the chief object is to keep a uniform rather warm and moist atmosphere.

THE INTERNATIONAL EXHIBITION IN EDINBURGH.—The schedule of prizes to be offered by the Royal Caledonian Horticultural Society at the International Exhibiton to be held in the Waverley Market, Edinburgh, on September 13, 14, and 15 next, has been issued, and copies may be obtained on application being made to the Secretary, Mr. P. MURRAY, THOMSON, S.S.C., 5, York Place, Edinburgh. We shall expect to see a magnificent collection of fruit at this show. In Class I. for a "Table of Dessert Fruit," five prizes are offered, which in the aggregate amount to £65. Equally liberal prizes are offered in the following classes which include that for a collection of twelve dishes of fruit, the prizes offered for which amount to £51, and another for a collection of eight dishes of fruit, for which £30 is offered. The numerous classes for Grapes will doubtless be well contested, for every Scots gardener prides himself upon his ability to grow good Grapes. In the class for eight bunches, including not more than two bunches of any one variety, the first prize will consist of the Scottish Challenge Trophy (value



PHALÆNOPSIS SCHILLERIANA IN THE GARDEN OF LORD ROTHSCHILD, TRING PARK, HERTFORDSHIRE.
The specimen had eighty-eight expanded flowers and eleven buds. The longest leaves were 15½ inches in length by 5½ inches wide.

50 guineas), a Gold Badge, and £15. The second prize will be £15; third prize, £10; and fourth, £5. There are as many as thirty-five classes for Grapes, including several for seedling varieties. The classes which immediately follow those for Grapes are for other indoor fruits, and some for hardy fruits. We hope that English growers in the Southern counties will make a good display of hardy fruits in Edinburgh, that the Scotch people may become more familiar with the quality of the Apples and Pears obtained in the more favoured districts in this Isle. There are classes for preserved fruits and jams and for fruits which have been grown abroad. There are numerous classes for ornamental foliage and flowering plants, and growers from south of the Tweed will doubtless help to make this section a success. Vegetables are certain to be well shown, for they are always an outstanding feature at the September shows in Edinburgh, and the prizes to be won in these classes are worthy the efforts of the best growers. Every effort should be made to ensure that the classes bearing on the scientific aspect of gardening be well maintained, and that in every section of class 219 it will be found necessary to award a Veitch Memorial Medal. Under gardeners are asked to draw plans to scale showing the best way to lay out a piece of ground 20 acres in extent, and from enquiries we have received it would appear that a number of young men intend to enter the competition. Of the 252 classes the last forty are of unusual interest, and from every point of view it is desirable that the Edinburgh International Exhibition of 1905 shall become an unqualified success.

LINNEAN SOCIETY.—A meeting will be held on Thursday, March 16, 1905, at 8 P.M., when the following papers will be read:—1, "Contributions to the Flora of Liberia," by Dr. OTTO STAPF, F.L.S. Exhibitions:—"Penguins and other Birds from the Falkland Islands, and Scratched Rocks from a Rockhopper's Rockery," by Mr. RUPERT VALLENTIN, F.L.S.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture-hall of the Institution on Monday, March 13, at 8 P.M., when a paper will be read by Mr. E. MORTEN (Barrister-at-law), entitled "Surveyors' Reports and Certificates."

PRESENTATION TO THE CARDIFF PUBLIC PARKS.—At a recent meeting of the Cardiff Parks Committee, Mr. W. W. PETTIGREW, superintendant of the public parks, reported that a gentleman who recently died at Whitchurch (Mr. WATSON), had left his valuable collection of Cactaceous plants to be handed over to the town. Their value might be anything from £250 to £400. It was decided that the gift should be accepted and that £150 should be added to the current estimate for the purpose of erecting in the beautiful Roath Park, laid out by Mr. PETTIGREW, the first instalment of a house to accommodate the plants.

PRESENTATION TO MR. J. ROBERTS.—The members of the garden staff at Welbeck assembled on Monday evening, the 6th inst., to present for Mr. ROBERTS's acceptance a testimonial on the occasion of his retirement from Welbeck, as a token of the high esteem in which he is held. It took the form of a "silver tea and coffee set," suitably inscribed. The presentation was made by the senior foreman on behalf of the garden *employés*. The loss of Mr. ROBERTS is a source of the deepest regret to all who have worked under him, and he carries with him from Welbeck the best wishes of all his men, who have found in him a good friend and kind-hearted master. Since Mr. ROBERTS has been at Welbeck he has carried out some very much needed improvements in the way of making the young gardeners more comfortable by building a new bothy, which has a well-stocked library attached to it. Wherever he goes it will be with the best wishes of all from Welbeck and district.

OXFORD AS A SCHOOL OF FORESTRY.—There is something rather grotesque about this announcement to those who remember Bagley Wood as it was several years ago. The Scientific Department of the University has greatly developed since then, so that the preliminary part of a forester's education might possibly be evolved, but Oxford has still much leeway to make up before it can be considered up-to-date.

THE ALMOND.—The first flowers on the Almond-trees in a favourable locality in the south-western suburbs of London expanded fully on Tuesday last, March 7. The first flowers on the same trees last year opened on March 21.

THE NICE BATTLE OF FLOWERS.—We understand that this festive ceremonial was this year less remarkable than usual owing to the scarcity of flowers, due to the severe weather recently experienced. We could wish, for some reasons, that such use of flowers was more often curtailed.

FLOWERS IN SEASON.—A box of brilliant Cineraria flowers has been sent us by Messrs. CLIBRANS, Altrincham, Cheshire. The strain from which these were gathered is evidently remarkable for the clearness and variety of colour, as well as for the large size of the flowers.

POTATOS.—Since the memorable "tasting test," when over sixty varieties were tasted on the same occasion, we too have been favoured with samples for trial. Fortunately they have not been very numerous, nor did they all arrive at the same time. The first was "Sir John Llewelyn." Of this we personally could not report favourably; but, as showing how tastes differ, some of the same Potatos made a most favourable impression in the case of other people. "Sutton's Discovery" was the next to be submitted to the test of the cook. This is a variety which is a robust grower, a good cropper, and has gained a great reputation from its relative immunity from disease. When cooked, we found the outer layers flaking off, whilst the centre was a "mass of flour," such as we used to see in Potatos years ago. The flavour was good. "Peacemaker" is an oval kidney with netted skin and shallow eyes. The colour was in some cases blackish at one end, but the tubers were floury and of excellent flavour. "Table Talk" has a rounded tuber with very slightly netted skin, and very deep eyes. When cooked it was seen to be floury, white, and particularly delicate in flavour. The two last varieties were sent us by Messrs. SCARLETT, of Market Street, Edinburgh. In the matter of flavour so much depends on circumstances that no great importance can be placed on individual expressions of opinion.

—— Now that Potatos are exciting so much attention we should like to have the opinion of growers upon the cause of the different shapes which tubers assume. Why are some globular or nearly so, others oval or oblong, others flattened at the sides (lapstones)? The netted skin, the shallow or the deep eyes, the purple shoots and other peculiarities are easily accounted for, but the causes regulating the shape of the tubers are not so obvious. Another peculiarity has been pointed out to us in the case of Sharpe's Express, in which the sprouts are very short and sturdy, and thus are less likely to be broken off than are long sprouts, a matter of some importance to market growers. This variety, from the peculiarity just mentioned does not make much visible growth at first, but when favourable conditions arise then they develop rapidly. The retarded growth of the shoots is a great advantage when frost occurs, as the tops are not so likely to be damaged as those that grow more rapidly and expose a relatively greater surface to the action of frost.

CO-OPERATIVE GRADING OF FRUIT.—At the annual general meeting of the Herefordshire Association of Fruit-growers and Horticulturists which was held on March 1 at Hereford, a committee was appointed to consider the best method of giving effect to co-operative grading and packing, and also the sale of fruit. Mr. H. P. BULMER observed that the Americans and Canadians were in the right when they decided to grade Apples into sizes, and established brands or marks by which the contents of the barrels of fruit were well known before they were opened. Mr. JOSEPH RILEY was re-elected President. It was stated that the membership was rapidly increasing, and there was a balance of £20 odd in hand.

CAOUTCHOUC AND COFFEE.—M. DE WILDEMAN, in the latest number of the *Comptes Rendus*, mentions a climbing plant, Baissea gracillima, as a source of "rubber," which is also yielded by Periploca nigrescens, a near relative of P. græca, which is cultivated in our gardens. In the same number, M. CHEVALIER mentions Caffea excelsa, also a native of the Congo basin, as a source of coffee. The proportion of "caffein" in the seeds is said to be no less than 1·8 per cent. The flavour is also described as "very estimable." Our Colonial friends should take note of these useful discoveries.

LORD MORLEY.—The death of the Earl of MORLEY will be keenly felt not only in the House of Lords and in his own county, but also among garden-lovers. He was a keen horticulturist, and had fine collections of rare and beautiful shrubs at his two seats, Saltram and Whiteway, of both of which descriptions from the pen of Mr. FITZHERBERT have appeared in our columns.

"POLYGONUM FOR BANKING."—The Polygonum intended is P. cuspidatum, and by "banking" is meant the preservation of the banks of streams, especially those liable to be occasionally flooded. Our new American contemporary, *Horticulture*, says that it "surpasses Willows for holding streams, and that, once established, it is a stayer." We give currency to this as a valuable hint.

INTERNATIONAL BOTANICAL CONGRESS, VIENNA.—This congress will be held in Vienna from June 11 to 18, together with an International Botanical Exhibition. The nomenclature question will occupy a large share of attention, in addition to which numerous papers on botanical and agricultural subjects are announced. Various excursions are planned both before and after the meetings of the Congress, such as to the summit of the Schneeberg, a trip to Illyria (occupying about a month); similar visits to the Austrian coast, to the Eastern Alps (one month), the lower Austrian mountains and the Valley of the Danube (10 to 14 days). Shorter outings will be made to places in the neighbourhood of Vienna, and visits will be paid to the scientific establishments of the Austrian capital, including the Botanic Garden of the University, that of Schönbrunn and that of Baron ROTHSCHILD at Hohe Warte; the Seed Control Station; the Experimental Station of the Hochschule für Bodenkultur; the Forestry Station at Maria-brunn, &c. All communications should be addressed to the General Secretary, Dr. A. ZAHLBRUCKNER, I. Burgring 7, Vienna; and during the meeting of the Congress, enquiry offices will be open at the University I. Franzensring, and at the Botanical Garden III., Rennweg 14. Arrangements for lodgings, restaurants, &c., will be made if applications be received before June 1. A lady's committee will endeavour to make the stay in Vienna as pleasant as possible to lady visitors. As if this programme were not full enough the Royal Hungarian Society of Natural Science invites the members of the Congress to make a "collective excursion" for five or six days to Budapest and its neighbourhood. Those intending to avail themselves of this most attractive trip should apply to Dr. CHARLES SCHILBERSZKY, Secretary of the Botanical Section, Budapest I., Budafoki-út 13.

MENDEL'S EXPERIMENTS WITH PEAS.—In adverting incidentally to this subject some time since we omitted to state, what indeed we did not then know, that it was Mr. DRUERY who first called the attention of the Royal Horticultural Society to the matter, and it is to him that we are indebted for the translation of "Mendel's Memoir" which appeared in the Journal of the Society, and which was afterwards incorporated in Mr. BATESON's work entitled, *Mendel's Principles of Heredity.*

THATCHED ROOFS.—We frequently see in representations of Japanese scenery thatched cottages from the roof of which are growing tufts of Iris tectorum. Mr. H. C. DAVIDSON, in the *Morning Leader*, suggests that a trial should be made with this Iris in suitable situations. We have no doubt many plants might be grown under such circumstances in this country, but we do not think we could manage to grow Pineapples on our thatched roofs, such as were once figured in our columns.

CEPHALIPTERUM DRUMMONDI. — American papers are singing the praises of this West Australian Composite, seeds of which have just got into the hands of Mr. BURBANK, who has raised "improved" varieties by selection. The flower-heads are of a pink colour, which is retained in drying, so that they are likely to be used for ladies' millinery. Mr. BURBANK is quoted as saying "that the largest millinery establishment in the world has, after examining the flower with great care, desired me to hold it for him (*sic*) without regard to price." West Australia and the Cape abound in "everlasting" flowers of a similar character.

"VARIATION OF ANIMALS AND PLANTS UNDER DOMESTICATION."—When the *Origin of Species* was first launched upon a then unsympathetic world it was felt by its author, as by the public, that the evidence upon which the theory of evolution was based should be made public. As a result Mr. DARWIN published two volumes under the above title. These volumes were packed with details from all sorts of sources, arranged with great skill and scrupulous fairness, to support the author's views. Horticulture was very largely drawn upon, and the scattered notes in the horticultural press, especially in the columns of the *Gardeners' Chronicle*, were utilised and coordinated in a manner that gave great satisfaction to both the writer and to the editors. A popular edition in two volumes, edited by Mr. FRANCIS DARWIN, has just been published by Mr. MURRAY at a low price, and we cannot too strongly recommend it to the notice of all interested in the philosophy of horticulture. Practical men who concern themselves with facts only will find that these volumes constitute a perfect encyclopædia of facts and of references, set forth with that impartiality and freedom from bias which were so characteristic of the great naturalist.

SEED LIST.—We have received a list of seeds offered for exchange by the Imperial Botanic Garden, St. Petersburg. Those wishing to benefit by it should make immediate application, addressed to Prof. Dr. FISCHER DE WALDHEIM, Director.

STATE HORTICULTURE IN AMERICA. — The General Assembly of the State of Rhode Island has been asked to appropriate 15,000 dols. for a greenhouse at the Rhode Island College of Agriculture and Mechanical Arts at Kingston. At the annual meeting of the Board of Managers of the New York Botanical Garden, Dr. BRITTON called attention to the rapidly-filling greenhouses and to the advisability of planning for the construction of another range of houses, which should have a floor area of at least as great as the present range, to be erected to the eastward of the Bronx River. The report of President H. H. GOODELL to the trustees of Amherst Agricultural College recommends the addition of a number of horticultural buildings, and it is understood that the trustees will recommend to the Legislature immediate permanent improvements at a cost of over 100,000 dols. This includes 3,200 dols. for an addition to the greenhouse of the entomological department; 39,500 dols. for erecting and equipping a new building, and 14,600 dols. for a new greenhouse in the horticultural department; 35,900 dols. for a new building in the botanical department; and enough additional money to connect the botanical and horticultural buildings with the heating plant. *Horticulture.*

"CASSELL'S POPULAR GARDENING" is now completed by the issue of the twenty-fourth part. It is well got up, abundantly illustrated, full of useful hints, and provided with an excellent index, as well as a table of contents, the latter rendered specially necessary by the plan of the work.

PUBLICATIONS RECEIVED.—*Agricultural Bulletin of the Straits and Federated Malay States.* Edited by H. N. Ridley, November, 1904. Contents: Layering Rubber Trees, Experimental Rubber Tapping at Singapore, Asclepias curassavica, &c.—*Annual Report of the Bureau of Industries for the Province of Ontario*, 1903. Part I. Agricultural Statistics; Part II. Chattel Mortgages.—From the University of Illinois Agricultural Experiment Station. Bulletins No. 96: *The Testing of Corn for Seed*, by A. N. Hume; and No. 97, *Market Classes and Grades of Swine*, by W. Dietrich.—*Peat and its Products*, an illustrated treatise on Peat and its products as a national source of wealth, by W. A. Kerr, V.C. (Publishers, John Smith & Son, 19, Renfield Street, and 225, Ingram Street, Glasgow).—From the Midland Agricultural and Dairy Institute (Kingston, Derby), Bulletins for 1901. No. 1. *Report of an Experiment with varieties of Potatos at Friskney, Lincolnshire*; No. 2, *Report on Field Trials on the Manuring of Seeds, Hay*; No. 3, *Report on Tests of Varieties of Potatos at Althorpe*; No. 4, *Report of Experiments with Barley in Lindsey, Lincolnshire*; No. 5, *Report on Field Trials on the Manuring of Mangels.*—*Farmer and Stockbreeder Year Book*, being the Farmer and Country Gentleman's Almanack for 1905. We note articles herein on the Rating of Agricultural Land, by T. C. Jackson; How New Varieties of Potatos are Produced, by Mr. Findlay; and the Renovation of English Orchards.—*Transactions of the English Arboricultural Society*, vol. vi., part 1, compiled by Mr. J. Davidson. Contents: Management of Hedges, by Mr. T. Conway; Formation of a Crop of Larch, Mr. Wylam; Production of Coniferous Timber, Mr. Anderson; and Notes on Japanese Larch, by Sir Hugh Beevor and Dr. W. Somerville.—*The Agricultural Journal of the Cape of Good Hope*, February. Contents: Extra-tropical Forestry, Irrigation in the North-West, a Late Cape Orange, &c.—From the Cape of Good Hope Department of Agriculture: *Report of the Government Botanist and Curator of the Herbarium for the Half-year ending June*, 1904. Dr. MacOwan reports favourably upon the progress achieved.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

EPIPHYTES IN ENGLAND.—At the general meeting of the Linnean Society (see *Gardeners' Chronicle* for February 11), in a discourse on "Botanical Collecting," Dr. Augustine Henry, F.L.S., said that the assertion in text-books that epiphytes of the higher types than Ferns do not occur in Europe is too sweeping, and the celebrated traveller gave several instances of epiphytes occurring in our islands. At Pencarrow we have several interesting instances of shrubs growing on large trees. Seedling Rhododendrons, apparently ponticum, occur in two cases: one plant shared with a 2 feet high Yew a fork in an Oak tree fully 35 feet from the ground. A cluster of young plants nearly a foot high is growing on a Catalpa bignonioides. For many years the trunk of this tree was encircled by a large clump of Rhododendron ponticum; four years ago I cut it down, exposing some tiny seedlings on the Catalpa. These have since grown steadily, and are quite healthy. At the time I feared the exposure to sun and air would be fatal. For several years—three at least—a Bramble has been living 20 feet from the ground in the fork of a large Oak. The Bramble, probably Rubus fruticosus, makes luxuriant growth, but does not flower; no doubt the summer shade is too dense. Curiously enough these instances, which occur in a valley alongside a large artificial pond fed by a stream, are within 100 yards of each other. Here there is of course plenty of atmospheric moisture, but it must not be supposed that North Cornwall possesses the "moist, warm climate" of many parts of Ireland and of the West of Cornwall. Here we get but little benefit from the Gulf Stream. Last year's mean temperature was but 48·47° Fah., and the temperature for the past week has ranged from a minimum of 22° to a maximum of 44°. Amid slightly drier surroundings an Ivy is growing on a Plane-tree in a hole made by the loss of a medium-sized branch. In the first instance the Ivy grew up the tree from the ground at its foot; on reaching this moist receptacle for dust and vegetable *débris* it evidently stayed and rooted. Five years ago the Ivy was cleared from around the Plane, and since then this Ivy has had an independent existence. Cotyledon Umbilicus grows abundantly on many hedges, walls, &c.; but except for a few clusters on the stems of some old Currants trained against a north wall, I have never seen it as an epiphyte. Ferns growing on large trees are, of course, very common; but the common Polypody largely predominates. *A. C. Bartlett, Pencarrow Gardens, North Cornwall.*

SWEET-SCENTED SHRUBS.—In addition to Lilacs, Azaleas, and other favourites, the following species are well worth growing:—Clethra alnifolia, C. canescens (thrives in peaty soil or loam), Comptonia asplenifolia (having fragrant leaves, and growing 3 to 4 feet high; it delights in peat and requires slight shade). Calycanthus floridus is hardy here, also Laurus Sassafras. The evergreen Choisya ternata requires in most localities a sheltered place or a wall. *W. A. Miller, Underley Gardens, Westmoreland.*

FRUIT-GROWING IN BRITISH COLUMBIA.—The lecture on this subject delivered to the Fellows of the Royal Horticultural Society on the 28th ult. by the Agent-General for British Columbia, was as remarkable for its omissions of matters of great interest to his hearers as it was for such information as it gave. Specially was nothing said as to the pecuniary conditions under which land was held; what were the average rates and taxes per acre, cost of labour, and general cost of transit per ton per mile for the fruit. The lecturer spoke in strong deprecatory terms of what he in fiscal phrase described as the "dumping" of fruit into British Columbia from the United States. Prior to the expansion of fruit culture in that Colony, he had nothing but praise for the same thing, which he is pleased to term "dumping; but does not call it so when his Colony pours great quantities of fruit into Great Britain. But then, doubtless, to buy is evil, to sell is good. Not long since one of our great fruit-growers and a member of the Council of the Royal Horticultural Society declaimed against this "dumping," and said that only a duty placed on imported fruit would give the home grower a chance. Would it matter one atom to this oppressed person if the "dumping" were of United States or Canadian origin? In a conversation I had with Mr. Turner after the lecture I found that the greater number of the fruit-growers of British Columbia plant on their own freeholds, land having been furnished them free as grants by the Colonial Government. What wonder is it then that fruit can be sent here in great abundance and be sold very cheaply? We have nothing at all in this country so far as fruit-land is concerned that can at all compare with such tenure as exists in British Columbia. Here fruit-land is costly if purchased, and rents are high, whilst conditions of tenure are oppressive or uncertain. Mr. Turner said that a gentleman in the room had paid as much as £30 per acre for land in the colony, and he regarded that a higher price than would be paid in this country. I should like to learn of good fruit-land that could be purchased at that price per acre here. As to labour the few pictures really depicting fruit-growing shown by the lecturer rather indicated that very much less was expended on that element in fruit-growing there than is the case here. Railway transit also is far cheaper in the Colony. But it is evident if our fruit-growers wish to compete with colonial fruit in our markets they must proceed on lines that will enable them to put into trade fruit superior in size, in appearance, and especially in succulence and flavour, to that imported. Only in that way can the severe competition now experienced be satisfactorily met. *A. D.*

SEED-PODS OF PHYSIANTHUS ALBENS AND JASMINUM OFFICINALE.—I am sending to-day a seed-pod of Physianthus albens from a plant growing in the open in South Devon. I believe the fruiting of this Brazilian climber in the open to be rare, though I have met with it bearing seed-pods in two other cases. When first introduced into this country Physianthus albens, which has also been known under the names of Araujia albens, A. sericifera and Schubertia albens, was treated as a stove plant. Later it was introduced into the conservatory, and now it is found to be perfectly hardy in the open in warm positions in the south-west. The somewhat small, urn-shaped, white flowers are generally borne in the late summer, but the plants remain in bloom for a long time, and the specimen from which the seed-pod was cut was still in good flower in December. The blossoms prove a trap for insects, hundreds of humming-bird hawk-moths being caught by their long probosces during the hot weather. The plant in question is growing on the front of a house on the river Dart, about five miles from its mouth, and faces south. The plant has reached to the eaves, and is annually cut close back in April. It has fruited for the past three years, many of the seed-pods being considerably larger than the one forwarded. I also send fruit of the common Jasmine from the same garden. The fruiting of this species may not be a rare occurrence, but I never remember having met with it before. This has also seeded for the last three years [see figure of the fruit of this species in the *Gardeners' Chronicle*, Jan. 18, 1896, p. 80. Ed.]. The garden is remarkable for the number of plants that ripen fruits. Eugenias, Myrtles (both large-leaved and small-leaved), shrubby Veronicas, and Cotoneaster rigida spring up in numbers from self-sown seeds. It was in this garden that the Mint-scented form of Aloysia citriodora (the so-called Lemon-scented Verbena) appeared. The Mint-scented branch, which has been extensively propagated from, on the original plant is still alive, and its perfume is quite distinct from that of the remainder of the bush. *S. W. Fitzherbert.* [The fruit of the common Jasmine has been figured in the *Gardeners' Chronicle*. Ed.]

FACTS AND FANCIES IN FORESTRY.—The interesting note under this heading at p. 44 leads me to say that the finest specimens of Larch I have ever seen, not excepting the famous Dunkeld trees, were growing in shallow soil overlying limestone of great depth in the Coolbanagher and Corrig (Spire) woods situated some 4 miles apart on the Emo Park Estate, the latter woods towering high above and within a few hundred yards of the Portarlington Station, on the main line of the Great Southern and Western Railway from Dublin to Cork. The hill, owing to its high altitude and conical shape, and to the fact that the spire of some old temple protrudes a considerable distance above the summit, forms a landmark for many miles around. The Coolbanagher Wood also occupies a high situation, the shallow soil of a light, open nature covering the surface of the solid limestone rock to the depth of from 9 to 18 inches. Notwithstanding these apparent drawbacks to tree-growth they have attained to good size and dimensions, the trunks being straight and of great thickness, and in great demand by timber merchants. Larch and Fir are naturally surface-rooting trees, though in the circumstances indicated they had no option to be otherwise. The large number of Fir and Larch-trees met with in the process of cutting peat for fuel in the Irish bogs present in every case a mass of large, horizontal roots attached to the buried trunks, which have remained sound for centuries past. But specimens of the Larch growing excellently under conditions the reverse of those described above may be mentioned. These trees are growing on the banks of the river Barrow, about 48 miles from Dublin, at a point where the river divides the King's and Queen's Counties, some 2 miles east of Portarlington, on the Wilmott-Chetwoode estate. Here the trees occupy a low, moist tract of land, about 300 yards in width, bounded on the one side by the Barrow, and on the other by the canal running from Dublin to Mountmellick; the soil, overlying a gravelly formation, is loamy, moderately rich, and deep, as the fine timber growing thereon testify. These trees I have not seen for a quarter of a century or so, and if they are still standing must be magnificent specimens. Thus, some timber trees will flourish and attain large dimensions under opposite conditions, and separated but a few miles. *H. W. Ward.*

"DRIP" IN PLANT HOUSES.—We enclose a section of the bar (see fig. 63) which we have used for over thirty years, and which has answered admirably for this purpose. You will note that the grooves are worked in the solid, and this we consider essential, as however carefully the drip piece may be put on, it is sure to open at the joint in time and lead to decay. All houses, whether for fruit or plant culture, should be fitted with drip bars. *Foster & Pearson, Ltd., Beeston.* [It will be observed that this method is only practicable when building new houses or replacing roofs. Ed.]

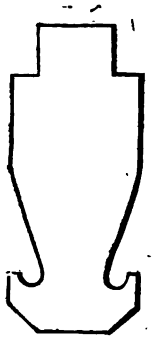


Fig. 63.—Messrs. Foster and Pearson's improved glazing-bar.

—— Referring to the letters and illustrations which have appeared recently in the *Gardeners' Chronicle* in reference to the question of the prevention of drip, we send you a section through the glazing-bar (see fig. 64) which we have now used for a number of years. "Prevention is better than cure," and as you will see we provide a channel which is part of the bar itself, and formed when it is put through the machine for carrying away the condensed moisture from the under side of the glass. You will notice also that a cap is formed on the top of the bar, and the putty is fitted in underneath this cap so that it is impossible for the weather to get to the back of the putty and cause it to shell off. No doubt the devices illustrated by your correspondents are excellent for remedying an existing defect, but in the erection of new glasshouses it is well to see that a bar such as we have described is used so that there need never be any fear of damage being caused to plants by drip. *W. Richardson & Co., Darlington.*

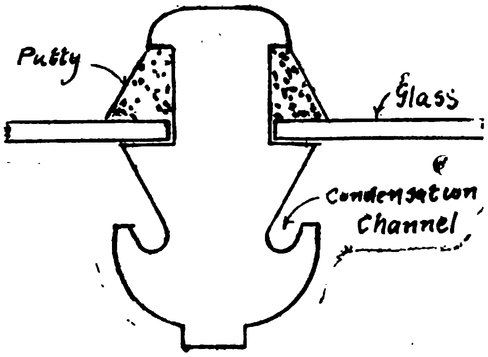


Fig. 64.—Glazing-bar used by Messrs Richardson and Co.

PINUS INSIGNIS (see "Enquiry" on p. 96).—This Pine succeeds best when planted from pots. Those plants received from the nursery with the roots tied up in sacking, and the advice to plant them with the sacking remaining on the roots, was given for obvious reasons—viz., to prevent what soil there was leaving the roots. To plant this Pine without any soil adhering to the roots is to court failure. *T. H. Slade, Poltimore Gardens, Devonshire.*

HIMALAYAN RHODODENDRONS AT SINGLETON.—I was much interested in reading on p. 136 the notes on the beautiful trees at Singleton. Doubtless these varieties are much hardier than they are thought to be by most growers. We have plants of R. Falconeri, R. Thompsoni, R. arboreum roseum and R. a. album, which I brought from Cornwall four years ago. They were planted by the side of woodland walks, where shelter was provided by large masses of R. ponticum. During severe frost additional protection has been afforded by placing branches of R. ponticum around the plants, thrusting the ends into the ground so that the branches lean inwards over the plants. The growth each year has been most satisfactory. If a good Rhododendron soil is provided, and shelter is afforded from cold winds, I feel sure many of these varieties may be successfully grown in the home counties. At the present time we are cutting large branches of R. Nobleanum in flower for decorative uses from plants grown in sheltered nooks out-of-doors. *Chas. Page, Dropmore Gardens, Bucks.*

APPLE TOWER OF GLAMIS (see p. 69).—This Scotch Apple succeeds well here also (Hants), and I have had it grow well and crop heavily in Yorkshire and other places. Its habit is somewhat of a semi-weeping character, and is very suitable for cultivation as a standard tree in a grass-covered orchard. Those who require a real good kitchen Apple having fruits of medium size and good quality cannot do better than plant this variety. As Mr. Yates advised, do not prune it much, but allow the branches to grow freely, merely thinning the branches out to admit light and air. *E. M., Bishops Waltham.*

MR. PETER FISHER.—I was pleased to see on p. 121 that my old friend, Mr. Peter Fisher, is still alive and doing well. He came to me from the Duchess of Atholl's gardener in July, 1880, and he stayed with me till November, 1882. He was the most persevering and painstaking young man I have met in over fifty years' experience. These were the days of flower shows, when we were able to grow good specimen plants, fruit and vegetables in London, and I advised him to go into some large place in the country, where he would see vegetables and hardy fruit well grown in abundance. He was sent to Mr. Pease, of Hutton Hall, Yorkshire, where he stayed about two years, he then returned to me having the wish to go to America, and I persuaded him to do so. He obtained a situation at Mount St. Aubern, near Boston, where he stayed a few years. He used to write to me to get him seeds of different things, but he was most anxious about Amaryllis, Carnations, and Cyclamen, which we had at St. Dunstans, I gave him of my best. He then opened the Mount Vale Nurseries at Boston, U.S., called Fisher Brothers, and used to send to me to procure him large quantities of seeds of Cyclamen, Carnation, and Primula seeds; and several years after he wrote to say he had sold his share in the Mount Vale Nurseries, and was opening one at Ellis, near Boston, as a Carnation specialist. Two and a half years ago he paid me a visit of some duration, and brought his wife and family. Mrs. Fisher having formerly lived in St. John's Wood. He was very careful to carry back with him some of the standard Carnations and Amaryllis of twenty years ago. Therefore not only the men, but some of the best seeds have gone to America from London. *Richard Butler, gardener to Lord Aldenham, St. Dunstans, Regent's Park.*

TSUGA MERTENSIANA AT SINGLETON.—Can Mr. Harris state the date when the fine Tsuga Mertensiana (Albertiana) mentioned on p. 136 was planted; also the girth of the trunk at 5 feet from the ground? This I imagine must be one of the finest specimens of the species in this country. We have a fine specimen here, but it is not yet 80 feet high. *C. Page, Dropmore Gardens, Maidenhead.*

FRUIT PROSPECTS AND THE STORAGE OF APPLES.—With me Pear and Plum trees are making a grand show for flower. Some of them are rather dangerously forward, but this spell of cold weather, by keeping the fruit buds back, may possibly be the means of saving them. In this country our prospects of either fruit or no fruit entirely depends on the severity and frequency of frosts during the flowering season. My Apples, which were stored in a cool, dry cellar, have kept splendidly, and I believe a cellar is the very best place for storing them. I know Apples are often placed upon the wooden floors of a garret, especially by farmers who have no proper fruit-room, and where they soon get withered; but many fruit-rooms that I have seen filled belonging to even good gardens were little better calculated to keep fruit in good condition than is the farmer's garret. *W. M., Berkswell, February 27.*

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The remarks of "A Fellow" upon the *Journal of the Royal Horticultural Society*, in your issue of March 4, move me to leave for once the ranks of the "quiescent" Fellows, for whom he claims to speak. Very probably many Fellows, especially those able to frequently attend the shows of the Society, find themselves amply repaid for the value of their subscriptions by other privileges, and leave their *Journals* unread. If so, they lose much, and the depth of their horticultural interest stands condemned by their neglect. Fellows with a genuine vital interest in horticulture and all that concerns plants are the most worthy of consideration, and they will not be amongst those whose numbers of the "Journal are put on one side and never looked into." Even those whose interest is not sufficiently great to lead them to study the more scientific papers can read the table of contents and select what is to their taste. The various articles are naturally of unequal value, but they are all worth careful reading, and they are not long. Much of the "Extracts from the Proceedings of the Society," &c., are not of a kind to be read through, but are valuable for reference. With regard to the question of cut or uncut edges, uncut seem to me more in keeping with the character of the publication. "Busy people" will "manage to read" about any subject in which they are really in earnest, and if that subject be plants they will find a mine of delight in the *Journal of the Royal Horticultural Society*. *M. I. W.*

—— "A Fellow," see p. 138, is well within his rights in criticising the Journal. His first complaint is as to the issue of the parts in an uncut state, because "a few are permitted to dominate the Council," and suggests "that the labour in cutting the leaves is too great for busy people to undertake." One can scarcely believe there are such lazy people in existence. It must be too much trouble for them to cut a Rose-bud, or pour water into a flower-pot. I had an uncut copy before me when I read the Fellow's remarks; I sent for a bread-knife and deliberately cut all the leaves in seventeen minutes. I hope more than "one in a thousand" of the Fellows think it a pleasure to cut the leaves of their copies. If the copies were sent out "guillotined," to use "A Fellow's" elegant expression, the Council would be designated barbarians by hundreds of Fellows, and our worthy Editor would have a bad half-hour at the annual meeting. If some of the Fellows know nothing about books, they need not let everybody know it. The December issue of the Journal is full of varied and useful information. Goodness only knows what "A Fellow" would like to cut out! Perhaps he would begin with Dr. Cooke's excellent papers on "Pests of the Shrubbery;" but even Fellows who do not grow shrubs must be grateful to the veteran who is giving us the result of sixty years' labour. Again, who can write so well upon Himalayan Rhododendrons as Sir John Llewelyn, who grows them so well in his own garden? A new writer comes next, Mr. W. T. Hindmarsh, and his paper is so interesting that, like little Oliver Twist, we "want some more." Are there any of us who are not grateful to M. Viviand-Morel for his careful paper on the genus Rosa? Mr. Leake's papers on the Indigo-plant must be of immense value to those interested in the valuable dye obtained from it; and it all adds to our universal stock of knowledge. In fact I have looked through the papers, and have no complaint to make of any of them. Reviews of books and short notes are useful and interesting. I have all the Society's publications, from the first volume of the *Transactions*, published in 1812, until the present time, and do not hesitate to assert that none of the publications in the past is equal to the Journal now being sent out. There is no need to go into the matter of cost; the Council can be entrusted with that. There are three parts in the present issue, and only one part more will be required for the supply of one year. One editor is enough, and I for one sincerely trust that the Rev. William Wilks may long be spared to continue the work in the future he has done so well in the past. I fear if such editors as "A Fellow" were to have any share in the work of cutting down the papers and "guillotining" the leaves of the parts before they were sent out, stormy scenes would follow, and one might safely predict that the present gratifying access of Fellows would not continue; but there will always be a few who cannot let well alone, and must needs find something to talk about, or to ventilate their supposed grievances in the horticultural Press. *Jas. Douglas.*

MANURE FOR PEACH-TREES.—On p. 139 "A Reader" stated that when the fruits have been gathered no more manure should be given to Peach-trees. There is no doubt that trees are greatly benefited by watering with diluted manure-water after the fruit has been gathered, also in the winter months should they require watering. I think the practice of watering with manure-water and washing-in with clear water, or *vice versâ*, is not a good one, it being then most difficult to estimate the amount and strength of the manure-water each tree receives. The most satisfactory way is to dilute, say, 6 gallons of manure-water with 30 gallons clear water, using it stronger or weaker at discretion. *J. S. Higgins, Rûg Gardens, Corwen, Wales.*

—— Replying to a note by "Reader" on p. 139 of the *Gardeners' Chronicle*, I may say that I afford Peach and Nectarine trees, whether growing under glass or out-of-doors, root waterings with farmyard manure-water at intervals during the resting period. This practice is followed with the best possible results, and there is not the least injury done to root fibres, although it is only when the manure-water is above its usual strength that we dilute it. I advised that the trees should be examined because of the dryness of the season, which rendered it imperative that the borders should be examined before the trees came into flower. Manure-water at this time would add much strength to the flowers and vigour to the young fruits. A practical man would not give strong stimulants to an actively growing tree which has become dry at the roots, but at this season of the year there is no risk by doing so. At the same time no one would apply stimulants to a vigorous tree which had not a prospective crop. Manure-water is rich in nitrogen, and that from the stable contains almost double as much as does liquid-manure from the farm-yard. Nitrogen in some form or other is essential to Peach and Nectarine trees, and I have not yet found it to excite the trees to make growth too early. On chalky soils and soils containing sufficient lime, if a dressing of freshly-made wood ashes be applied in the autumn to provide potash, no more suitable manure than liquid from the farm-yard or stable can be found. "A Reader" states that no manure should be given the trees after the crop has been gathered, but I say, on the contrary, that a tree whose vigour has been reduced by perfecting a crop of fruit needs manure to help it to build up and perfect the buds, and render it in a condition for yielding a good crop in the following season. Trees so treated, I believe, yield superior results, but varieties which ripen their fruits late in September should not be treated so liberally afterwards. Apart from the many commercial fertilisers which I use, the following combinations of my own compounding have proved very beneficial. They are applied to the trees four times at least during the season. A mixture of nitrate of soda and superphosphate was followed by a crop similar in all respects to that obtained after using superphosphate and muriate of potash. Nitrate of soda should be used on light sandy loams, and sulphate of ammonia on heavy or retentive soils. The above manures containing potash encourage the formation of fruit-buds, but a certain amount of nitrogenous manure must be added to promote growth, without which bud-formation could not take place. The best all-round fertiliser for Peaches and Nectarines I have yet mixed is one of muriate of potash, superphosphate, and sulphate of ammonia. If "A Reader" will call here he will see that the strength and quantity of flowers the trees now carry, and the size and quality of the fruit that will ripen later, perfectly justify my practice. *W. H. Clarke, Aston Rowant Gardens, Oxon*

CONTINENTAL LABELS.—In answer to the enquiry on p. 144, I may say that in five nurseries in Germany, Holland, and Belgium where I was employed some years ago, yellow ochre mixed with linseed-oil into a thin paint was used for colouring wooden labels. *Walter Ingwersen.*

CUCUMBERS.—It would be interesting to know the importance Mr. Owen Thomas attributes to the fertilisation of the Cucumber in the production of saleable fruit; compared with that of using sulphur as a prevention for "spot," considering the sulphur proved effective? *G. H. H. W.*

AGAVE AMERICANA CAUSING SKIN IRRITATION [see also p. 158 for note on Daffodils causing similar irritation — in both cases from raphides. ED.].—In the *Gardeners' Chronicle* for January 20, p. 14, there was an article on "Skin Irritation," caused by the incautious handling of certain plants such as Rhus Toxicodendron, Primula obconica, and others. I did not see Agave americana mentioned, and it may not be generally known that the sap or juice of this plant causes intense irritation. On January 20 I had to take down two large Agaves that had recently flowered on St. Michael's Mount, Cornwall, and as they were too large to be brought through a doorway we had to cut them up, for which purpose a small axe was used, and the sap or juice getting on our hands caused intense irritation. One of my assistants who incautiously rubbed his face and neck with his hand suffered severely for a short time. I may mention the height of one of the flower stems was 24 feet. The other plant had evidently received an injury in the centre at some time, for instead of throwing up a single flower-stem, it threw up several small flower-stems from the axils of the leaves, and on cutting up this plant I found the centre ot be rotting. *W. J. P.*

SPICE APPLE.—I herewith send specimens of an Apple, known locally as Spice Apple, which I presume comes from D'Arcy Spice. It is of good flavour, and has been fit for use since Christmas, but is just now going past its best. The variety appears to be little known, but in good seasons bears heavy crops on a standard tree in the orchard here. Wellington, or Dumelow's Seedling, has been good this year from standard trees in the same orchard, and the fruits are in good condition at the present time; I enclose specimens. The highly-coloured Apple sent herewith sells well in the market early in the season; the flavour is poor, but the fruits certainly keep well. It is known locally and in Devon as the Bloody Butcher. Norfolk Beefing is in good condition still, and is also of splendid colour. *Geo. A. Head, Kingsdon Manor Gardens, Taunton.* [The fruits first mentioned by our correspondent are of the true Spice Apple described in Hogg's *Fruit Manual*, not D'Arcy Spice, the fruits of which will keep good much longer. The Dumelow's Seedling fruits are as fresh in appearance as when gathered, whilst those of Bloody Butcher are as useless, owing to their wretched flavour, as they are handsome. ED.]

EARLY PEACHES.—As I wrote to the *Gardeners' Chronicle* some two or three years since giving my experience of the earliness of the Alexander Peach, I should like to say a few more words in its favour. I have grown this variety for many years past, and have not, up to the present time, found its equal for earliness in ripening its fruits. Planted at the warmest end of the early house, which is generally started on December 15, it never fails to bear a heavy crop of good-sized, well-coloured fruits, which we are generally able to gather from April 15 onwards. This variety is followed by Rivers' Early Nectarine. Next in order of ripening comes Early Louise Peach, which, with us, carries quite large fruits. Then follow Peaches Early Alfred and Early York, succeeded by Lord Napier Nectarine and Condor Peach. These trees are all growing on a curvilinear wire trellis occupying the whole of the front of the house, the back wall being covered with trees, of Royal George Peach and Elruge and Victoria Nectarines. I have tried Waterloo for an early crop, but failed with it. Alexander however never fails to carry a crop of fruit with us. Waterloo planted in a second early house, started January 15, invariably carries a fair crop of fruit. Although these American varieties are liable to bud-dropping, yet I find them retain sufficient to produce a good crop of fruit. Peach-borders never ought to be allowed to become dry at any time of the year, as this is in a great measure the cause of a deal of bud-dropping. After the fruit is gathered, the trees should be exposed and hardened as much as possible in the autumn and early winter months, up to the time of closing the house for forcing. I always apply a good dressing of lime to the borders annually, and this I find is a great help to the trees, enabling them to strengthen and retain their buds, so that we do not suffer from bud-dropping to any great extent. Our second house contains trees of Dr. Hogg, Waterloo, Princess of Wales, Royal George, Barrington, and Noblesse Peaches, Rivers' Orange and Lord Napier Nectarines. Our latest house, which is much longer than the other two, contains almost all the later kinds of Peaches and Nectarines, including Apricots. Even in this cold, wet, sunless district we generally manage to gather Peaches from the middle of April into September from trees under glass. *Edward Ward, Longford Hall Gardens, Manchester.*

—— Mr. Divers, on p. 125, stated that dryness at the roots will cause any variety of Peach to drop its buds. I dispute that statement, and am very doubtful if dryness is the cause, or would be the cause, of any variety dropping its buds. So convinced am I that dryness is not so frequently the cause of bud-dropping as is generally supposed, that only last year I allowed a young tree of Early Rivers Nectarine to get as dry as it could be, until it was almost in flower, and not a single bud was dropped, and the tree ripened 254 good fruits. I do not by any means advocate dryness at the roots for Peaches, and take it for granted that no practical gardener will withhold water during active growth. I believe I have read in the *Gardeners' Chronicle* every year for at least twenty years that dryness was a cause, if not the chief cause, of Peach-trees dropping their buds, and yet we hear as much of the bud-dropping as ever. I have ripened fruits of Hale's Early in the first week of May in Yorkshire, Forfarshire, and Northamptonshire, and I was always troubled with buds dropping more or less. I attribute the dropping chiefly to premature ripening. Hale's Early and Alexander are generally grown in early houses with a south aspect, and the young shoots are regularly tied down to expose the fruits, and to get them to ripen as soon as possible, consequently the wood gets roasted with the fierce sunshine during the latter end of May, June, and July. Some years ago I tried shading the glass as soon as the fruits were gathered, and allowed the shoots to grow without being tied down, and although it did not prevent some of the buds from dropping, I found a marked improvement; but I have not had an opportunity of further experimenting with very early trees. I cannot agree with Mr. Slade that Hale's Early should be classed as only second-rate in flavour. I think a well-grown fruit of Hale's Early is hard to beat. I have obtained as much as 30*s*. and even 36*s*. per dozen for them (wholesale) in Covent Garden Market. Several of these fruits were over 10 oz. in weight, and the flavour all that could be desired. *George Duncan, The Gardens, Merstham House, Merstham, Surrey.*

NOTICES OF BOOKS.

THE BOOK OF THE LILY. By William Goldring. (John Lane. 8vo., pp. 98.)

The author of this attractive little volume reminds us that no one, whatever be his qualifications, can know all there is to be known about Lilies. He further alludes to the varied climates and conditions under which they grow naturally, and says that in no part of the world is there a garden where all the Lilies would thrive to perfection—that ideal is not to be realised. However true that may be, there are two factors which come into play in enabling us to make the best of circumstances—one is the natural powers of adaptation possessed by the plant; the other is the faculty inherent in or acquired by the gardener of finding out by experiment and judgment just what those powers of adaptation are and how they may be fostered in practice From this point of view Mr. Goldring needs to make no apology for writing about Lilies. If he does not know all about them, at least he knows more than most do, and his lengthened experience and balanced judgment render him an authoritative guide. Bulbs with thick fleshy scales, which only cover a small portion of the axis, are more difficult to cultivate and more susceptible to injury than bulbs with thin membranous scales which envelop the whole axis, and thus afford a greater amount of protection to the central bud or axis, and prevent the subjacent scales from drying up by exposure. The formation of a rootstock or rhizome, from which the bulbs are produced in some of the species, and the different manner in which the roots are emitted in different species, are also points that demand the attention of the cultivator. The author takes each species in its alphabetical sequence, gives a condensed summary of its characteristics, but devotes more space to its cultural requirements. The Madonna Lily, L. candidum, the longest known and, taken for all in all, the most beautiful species, succeeds in a cottage garden, whilst it is a failure in many an establishment of greater pretensions. The author attributes the failure, with some hesitation, to some fungoid disease. We do not think there is any reason for doubt as to this point. Further, Mr. Goldring tells us to leave this Lily alone when once established, as it much resents disturbance at the roots. "Cottagers do not disturb the bulbs, and that is why they succeed where gardeners fail." In our own case a tuft of white Lilies has been grown in the same spot for more than thirty years, with as little disturbance as could be experienced in any cottage garden, but only on one or two occasions has any flower been produced. In winter, however, the rich green of the foliage where all around is bare is most attractive. Martagons, ordinary and scarlet and Fortune's variety of tigrinum do well in the same garden, even though subject to more disturbance. For cultural purposes Mr. Goldring divides the Lilies into two groups, according as they require a moderately stiff soil and full exposure to the sun, or a peaty soil and shady situation, whilst a third group includes those that revel in a deep sandy peat soil that is naturally moist but not sodden, and where the aspect is partially shaded.

Some very judicious remarks are made as to the planting of Lilies in the open garden in association with Rhododendrons or other shrubs. This is a chapter particularly worthy of study by those intending to plant Lilies, and a similar comment may be made as to the chapter on planting Lilies, which gives evidence that the natural habit of growth of each species has been carefully noted in relation to the best methods of cultivating it.

The book ends with a complete list of the species and varieties in cultivation. There is a table of contents, which, with the list before given, to some extent obviates the necessity for an index, especially as the arrangement of the species is mainly alphabetical. There are numerous illustrations, so that the book is one which every lover of Lilies will desire to see on the most accessible shelf of his library.

TREES: A HANDBOOK OF FOREST BOTANY FOR THE WOODLANDS AND THE LABORATORY. By H. Marshall Ward, &c. Vol. 2, "Leaves:" (Cambridge University Press—C. J. Clay & Sons).

We are delighted to see that the second volume of this series amply confirms the good opinion we formed of the first. Whether we look upon the leaf from a morphological standpoint and as a most valuable asset in our systems of classification, or whether we consider it from the physiological side as the laboratory and workshop wherein are carried on those intakes and those outpourings, those combinations and recombinations, those buildings-up and those resolutions which constitute essential features in the life of the plant—in whatever way we look at it indeed the leaf is seen to be all-important.

Professor Marshall Ward before now has shown that he is no mere laboratory student, tied down to the intricacies revealed by the microscope or the test-tube, and no mere scrutineer and classifier of forms and dispositions as revealed in the herbarium, but he takes broad, general views, not disdaining or ignoring any department of botanical study, but giving to each, as far as circumstances will allow, its proportionate share of attention.

In the present work we have first a study of the leaf in general, of its form, structure, and functions, and secondly a classification of trees and shrubs according to the characters of the leaves. This portion is specially intended for foresters and gardeners who require to ascertain speedily the name of a particular tree without special reference to its botanical affinities. The classification, that is to say, is in a high degree arbitrary and artificial; thus on immediately succeeding pages we have the Clematis, the Elder, the Ash and the Horse-Chestnut. The juxtaposition of the Gueldres Rose with the purple Willow (p. 179) is likely to confuse a student, as the system of venation is quite distinct, though for purposes of tabular analysis the two come on immediately succeeding pages. All this is in accordance with the exigencies of the artificial arrangement adopted and with the utilitarian requirements of the practitioner. As more volumes are promised in the future, we trust we may have some further explanations of the varying morphology of stipules, and of the reasons for the diversity of form in the leaf, for the occurrence of the same form in widely different groups, and some more detailed account of the sequence of forms in the same tree, from the cotyledon to the fully-developed leaf—a point often of consequence to the practical man and one to which the student of morphology, phylogeny and of fossil plants must needs pay great attention.

The illustrations are numerous and, together with the glossary and index, add very materially to the merits of a book which we should like to see in every garden and forest library.

Obituary.

DONALD M OMISH.—We greatly regret to announce the death of this nurseryman, which took place very suddenly on Sunday, February 26, at the age of sixty-nine years. Deceased, who was a native of Crieff, learned gardening first under Mr. Mustard, gardener, Ferntower, and later with the late Mr. Roderick Macdonald, Drummond Castle Gardens. He afterwards became gardener to the late Hon. Captain Arthur Drummond, of Cromlix at Inchbrakie. About the year 1868 he commenced business in Crieff as a nurseryman and seedsman, renting the Currachreen Nursery.

PATRICK NEILL FRASER.—The death of this well-known horticulturist, of Rockville, Murrayfield, Edinburgh, is announced in the *Journal of Horticulture*. Mr. Fraser was Treasurer of the Royal Caledonian Horticultural Society for a period of twenty-eight years. He was also a member of the Royal Society of Edinburgh and of the Royal Scottish Geographical and Edinburgh Botanical Societies. He was particularly fond of Alpine plants and hardy Ferns, and cultivated rich collections at his residence in Murrayfield.

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

FEBRUARY 28.—*Present:* Dr. M. T. Masters, F.R.S., in the chair; Rev. W. Wilks, Dr. A. B. Rendle, Messrs. Saunders, Bowles, Hooper, Worsley, Massee, Gordon, Douglas, Veitch, Holmes, and Chittenden (Hon. Sec.).

Old Age in Plants—A letter was read upon this subject from C. B. LUFFMANN, Esq., of Victoria, Australia, who pointed out that many vegetatively propagated plants were dying out, owing to what he designated as a "prepotent tendency" and a diminishing food supply. It was decided to discuss the question, with reference especially to the Potato, at the meeting on March 28.

Henslow Testimonial.—Dr. MASTERS announced that the testimonial would be presented to Prof. Henslow at the meeting of the Scientific Committee on March 14.

Snowdrop "Sport."– A variety of the common Snowdrop, which had persisted in the same soil for ten years, was sent by Mr. J. M. RAWSON. Mr. BOWLES recognised it as Galanthus nivalis var. poculiformis, Hort.

Daffodil Poisoning (see also note on Agave on p. 156).—Mr. J. LOWE wrote stating that the gatherers of Daffodils often suffered from sore hands, and requesting some information as to a remedy. Mr. J. WALKER wrote stating that usually only those who had chapped hands, or who failed to wash their hands after picking the flowers, suffered from the trouble. The Committee were of opinion that the crystals of calcium oxalate (raphides), which are frequently in abundance in this and similar plants, were the cause of the trouble, and it was suggested that the workers should thoroughly grease their hands with tallow before picking the flowers, or should wear gloves.

Cyrtanthus lutescens.—Mr. WORSLEY showed a colour variety of this plant.

Decayed Crinum Bulbs.—Mr. WORSLEY also brought some decayed bulbs of Crinum, and described some of the organisms found in them. Mr. SAUNDERS undertook to report upon them.

Insects Injuring Pine Shoots.—Mr. WILLS wrote requesting information about a grub, Retinia buoliana, which bored into shoots of Pine and caused their destruction. This was referred to Mr. Saunders.

Leaves Decaying at Tip.—Croton and Dracæna leaves were received which were apparently injured through adverse atmospheric conditions, and a leaf of Asplenium nidus-avis malformed at tip probably through injury in its early stages.

Malformed Mushrooms.—Dr. MASTERS showed specimens of very irregularly formed Mushrooms, which Mr. MASSEE reported to be attacked by a mould Hypomyces (sp.). All such should be destroyed.

Laurel Leaves Diseased.—Dr. MASTERS also showed specimens of Laurel leaves with blisters upon them. Mr. MASSEE undertook to report upon them.

ABERDEEN AND NORTH OF SCOTLAND COLLEGE OF AGRICULTURE.

THE course of lectures instituted by this College, entitled "The Elementary Chemistry of Soils and Manures, with special reference to Horticulturists and Gardeners," was inaugurated on Tuesday evening, February 21. There was a large attendance, the lecture-room being crowded. The course, as intimated in our issue of 18th ult., will consist of six lectures.

The lecturer was Mr. James Hendrick, B.Sc., who said he felt highly gratified by the way they had turned out for that course of lectures. He had the honour of suggesting that course some time ago to the Governors of the college, and they very kindly took the matter up and made the necessary arrangements which enabled him to deliver that course. The reason why he had proposed that course of lectures was that in dealing with gardeners and meeting gardeners he had found that there were certain matters known to the agricultural chemist which might be of use in matters connected with the practical cultivation of plants. Within comparatively recent times a very great number of fertilisers—artificial fertilisers—had been introduced, and he found that very few opportunities were given to gardeners to learn about these, so that their information about them was very limited. He further found that the materials sold to gardeners and others as manures were not always what one would wish them to be. If they had a certain amount of information about these manures they might probably be able to make up manures for themselves much more cheaply, at any rate, and probably also much better than many of those things which were sold in small packages as garden, hothouse, or other manures. As an agricultural chemist, with a special knowledge of the chemistry of materials, such as manures, such materials also as were used for spraying plants, to combat their diseases and to destroy insect and fungoid pests, he came to try to give them some information which might be useful to them about these subjects. That Agricultural College wished to make itself of use to all interested in the cultivation of the soil, whether on a large or a small scale, in the neighbourhood of towns or in the distant country. So far they had been giving lectures in the country, but in this course they wished to bring information to those in the neighbourhood of the city who were interested in gardening. Mr. Hendrick then proceeded to deal with how plants grow, and how they were made up. The lecture, which was largely of a preliminary nature, was of a most interesting character. Mr. Hendrick intimated at the close that his next lecture would deal with manures.

NURSERY AND SEED TRADE ASSOCIATION, LTD.

FEBRUARY 27.—The annual general meeting of this Association was held at the offices of the Association, 30, Wood Street, Cheapside, London, on the above date, Mr. W. J. Nutting (Messrs. Nutting & Sons) being Chairman. The Report and balance-sheet for the last year were approved, and showed that several new members have joined the Association, the total number now being 193; also that the Association had answered 1,068 "status" inquiries, and expended £20 12*s*. 5*d*. in making special inquiries in relation thereto, and had recovered £3,958 (which were virtually bad debts) for the members.

The members referred to the Bill of last year for the prevention of corruption, and to the desirability of supporting any Bill for the same purpose which may be brought forward this year. The question of the sale of poisonous compounds by members of the trade was also discussed.

The financial position of the Association was considerably stronger, and efforts are being made to acquire a reserve fund to assist the members in punishing persons who improperly obtain goods, and for taking up matters which affect the trades represented by the Association.

NATIONAL POTATO.

WE are informed that the President, Sir John T. D. Llewelyn, Bart., offers a Silver Cup, value £10 10*s*.; for competition at the next show; Messrs. Carter & Co., in conjunction with Mr. Archibald Findlay, offer a magnificent Challenge Cup, value £50, together with £12 in cash. Messrs. Sutton & Sons offer £24 in cash prizes for their great Potatos Discovery and Superlative. Mr. E. J. Deal (Messrs. W. W. Johnson & Son, Ltd., Boston) offers a Silver Cup. Valuable cash prizes are offered by the following well-known firms: Messrs. Daniels Bros., Ltd., Norwich; Fidler & Sons, Reading; J. Kerr, Dumfries; Robert Sydenham, Birmingham; S. M. Thomson (Dalmeny agent), Edinburgh; William Deal, Kelvedon; Dobbie & Co., Rothesay; T. A. Scarlett, Edinburgh; Professor W. J. Malden, Ham; R. W. Green, Wisbech; J. Bettinson, Wisbech; G. Massey & Sons, Spalding; H. Scott, Warminster, and others. The total value of the prizes is nearly £200, and the schedule is comprehensive and varied.

GARDENERS' DEBATING SOCIETIES.

BARNSLEY PAXTON.—This Society closed its twenty-second season of debate for mutual improvement on Tuesday evening the 28th ult., when a large company was presided over by Mr. J. Henshall, and a paper with specimens was given by Mr. John Parker on "Parsley all the Year Round." The essayist gave a very interesting and instructive discourse on this valuable plant, and marvelled how it was that gardeners did not study and take greater care in its cultivation, so that fine crops all the year round might be assured. That such a thing can be done he lucidly explained, and proved by the handsome specimens he exhibited. He also urged that the roots should have liberal applications of good farmyard-manure, and dressings of lime to prevent canker, and that in the winter months the beds should be protected by shed-screens. The plant, he said, was first introduced into England 450 years ago. A long and interesting debate followed.

PANGBOURNE AND DISTRICT GARDENERS'.—The fortnightly meeting of this Association was held at the Riverside Club, Pangbourne, on Friday, March 3. Mr. W. Grieve presided. There was a record attendance of members. The lecturer for the evening was Mr. Edgar William Dix (gardener to Sir Benjamin Baker, Bowden, Pangbourne), his subject being "Annuals and their Culture." Details of the culture of these flowers from the sowing of seed till the flowering stage was fully dealt with. Mr. F. Tugwood, gardener to Mr. D. H. Evans, staged well-grown Primulas and several dishes of Apples. *T. N. F.*

CHESTER PAXTON.—At the usual fortnightly meeting of this Society held at the Grosvenor Museum on Saturday March 4, an essay on Bee-keeping was given by Mr. John Wynne, of Rowton. Mr. H. G. Little presided over a good attendance. The lecturer gave some valuable hints on the best and most profitable methods to adopt for successful bee culture, illustrating his remarks by the aid of lantern slides. The prevention of disease in Apiaries and our importation of foreign honey were also dealt with.

NORTH FERRIBY AND DISTRICT GARDENERS'.—A meeting of the above Society was held on Wednesday, March 1, Mr. F. Reid presiding over a record attendance. A paper on "Gardening, Past and Present," was given by Mr. G. Wilson, The Gardens, Bishop Burton Hall, Beverley. The essayist dealt with work in the garden in days gone by and of to-day, dealing with and comparing the two in a very able manner. A discussion followed.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—A lecture on "Orchids" was given in the King's Hall, Colman Institute, Redhill, on Tuesday evening, Feb. 28, by Mr. H. J. Chapman, gr. to Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, Northumberland. Mr. Jeremiah Colman, D.L., J.P., occupied the chair. Mr. Chapman said many persons considered Orchids in the light of plants only to be indulged in by those possessing a plentiful endowment of this world's goods. That was a great mistake. Many of the best species which fetch the greatest price are imported into this country, and realise about 1*s*. 6*d*. each. Many Orchids sold for £1,000 were originally bought for about 1*s*. 6*d*.

SCHEDULES RECEIVED.

DURHAM, NORTHUMBERLAND AND NEWCASTLE-UPON-TYNE BOTANICAL AND HORTICULTURAL SOCIETY'S summer flower show, to be held on Wednesday, Thursday and Friday, July 19, 20 and 21, 1905. Secretary Mr. J. B. Read, Dean Street, Newcastle.

GLAMORGAN DAFFODIL AND SPRING FLOWER SOCIETY'S exhibition to be held in the Drill Hall, Cardiff, on Wednesday, April 19, 1905.

BRADFORD AND DISTRICT CHRYSANTHEMUM SOCIETY'S nineteenth annual exhibition to be held in St. George's Hall, Bradford, on Friday and Saturday, November, 17, 18, 1905.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending March 4, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.	NIGHT.							
FEBRUARY 28 TO MARCH 4.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	37	35	45	33	26	39	41	43	Tot 0·27	3	8

REMARKS.—On February 28 there was 0·08 of snow.

THE WEATHER IN WEST HERTS.

One Frosty Night.—The past week was on the whole warm, but on the coldest night the exposed thermometer registered 13° of frost, or a lower reading than at any time in February. The ground has again become warm, and is now at about an average temperature at 2 feet deep, and about 2° warmer than is seasonable at 1 foot deep. Rain, hail, or snow fell on four days, but the total measurement was less than a quarter of an inch. Each day some rain-water has come through both percolation gauges, but the amounts have been small. The sun shone on an average for a little over two hours a day, or for about an hour a day short of the average duration of bright sunshine at this time of year. Light airs and calms have prevailed during the week, and the direction of the wind has been very variable. The mean amount of moisture in the air at 3 P.M. exceeded the average by as much as 10 per cent. Chionodoxa Luciliæ came first into blossom on the 3rd inst., which is five days in advance of its average date of flowering in the same part of my garden in the previous seventeen years, and six days earlier than last year.

FEBRUARY.

Exceptionally Warm and Sunny, and very Dry.—This was a very warm February. In fact, in the last nineteen years there have been only two other Februaries as warm. On the warmest day the highest reading in the thermometer-screen was 55°, which is in no way exceptional. On the coldest night the thermometer exposed on the lawn at no time indicated more than 9° of frost, which is the lowest extreme minimum registered by that thermometer during the last nineteen years. Rain, hail, snow, or sleet fell on thirteen days, to the aggregate depth of little more than an inch—which is not much more than half the February average—making the past month the seventh dry one in succession. On the morning of the 20th the ground was covered with snow to the mean depth of ½ an inch. About three-fourths of the total rainfall, or nearly 4 gallons, came through both percolation gauges during the month. The sun shone for over two-and-a-half hours a day, or twenty minutes a day longer than is seasonable. There were only four days altogether sunless, which is the smallest number I have yet recorded here in February. The wind was, as a rule, somewhat high, but in no hour did the mean velocity exceed 19 miles. The mean amount of moisture in the air at 3 o'clock in the afternoon was 2 per cent. below the February average.

THE WINTER OF 1904–5.

Remarkably Warm and Sunny and Very Dry.—There have been only four warmer winters in the last nineteen years. The mean temperature of each of the three months was in excess of the average, but December and January only slightly so. At no time did the exposed thermometer show more than 15° of frost, which is an exceptionally high extreme minimum for the season. Each of the three winter months was dry—the total deficiency from the average amounting to 2¼ ins. There have been only two other winters in the last nineteen years when the duration of bright sunshine was as great.

Our Underground Water Supply. — Since the winter half of the drainage year began in October the total rainfall has been 7½ inches, or 5½ inches in defect of the average for the same five months. This is equivalent to a deficiency in rainfall on each acre in this district of 126,830 gallons. *E. M., Berkhamsted, March* 7, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 152.]

MARKETS.

COVENT GARDEN, March 8.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. ED.]

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Acacia Drummondi, per doz.	18 0–24 0	Daffodils, Yellow Trumpet, doz.	4 0– 6 0
— arcuata, per doz.	12 0–18 0	Deutzia gracilis, per dozen	8 0–10 0
Aralia Sieboldi, doz.	4 0– 6 0	Ericas, per doz.	15 0–24 0
Aspidistras, green, per doz.	18 0–24 0	Euonymus, dozen	4 0– 9 0
— variegated, per doz.	30 0–42 0	Ferns, in thumbs, per 100	8 0–12 0
Azalea indica, p. doz.	15 0–30 0	— in 48's, p. doz.	4 0–10 0
— mollis, p. doz.	24 0–42 0	— in 32's, p. doz.	9 0–18 0
Asparagus plumosus nanus, per doz.	9 0–12 0	Ficus elastica, p. doz.	9 0–12 0
— Sprengeri, doz.	8 0–12 0	— repens, p. doz.	6 0– 9 0
— tenuissimus per doz.	8 0–10 0	Genistas, per doz.	6 0–10 0
Begonia Gloire de Lorraine, doz.	12 0–18 0	Hyacinths (3 in a pot), per doz.	6 0– 9 0
Boronia megastigma, per dozen	12 0–24 0	Hydrangea, Thos. Hogg, per. doz.	9 0 —
— heterophylla.	18 0–24 0	Kentia Belmoreana, per doz.	12 0–18 0
Calla æthiopica, per doz.	5 0– 6 0	— Fosteriana, p. doz.	12 0–21 0
Cinerarias, per dozen	6 0–10 0	Latania borbonica, per doz.	9 0 15 0
Crotons, per doz.	12 0–30 0	Marguerites, doz.	9 0–10 0
Cocos Weddelliana, per doz.	18 0–30 0	Mignonette, per dozen	9 0–10 0
Cyclamen persicum, per doz.	9 0–18 0	Primula sinensis, per doz.	4 0– 6 0
Cyperus alternifolius, p. doz.	3 0– 5 0	— obconica, per dozen	3 0– 5 0
— laxus, p. doz.	3 0– 4 0	Solanum capsicastrum, per doz.	6 0– 8 0
Dracænas, p. doz.	9 0–24 0	Spiræa japonica, per doz.	8 0–12 0
		Tulips, in boxes, each	1 6– 2 6

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Azalea Fielderi, per doz. bun.	3 0– 4 0	Lilium longiflorum, bunch	5 0– 6 0
— mollis, per dz. bunches	9 0–12 0	— tigrinum, bun.	2 0– 2 6
Bouvardias, per doz. bun.	6 0– 9 0	Lily of the Valley, per dozen bun.	8 0–18 0
Calla æthiopica, per doz. blooms	3 0– 4 0	Marguerites, white, per dozen bun.	3 0– 4 0
Camellias, per dz. blooms	1 6– 2 0	— yellow, per dz. bunches	3 0– 5 0
Carnations, best American vars., per dz. blooms	2 6– 5 0	Narcissus gloriosus, per doz. bunches	1 6– 2 6
— smaller blooms, per doz. bun.	18 0–30 0	— paper-white, per doz. bun.	1 6– 2 6
Cattleya, per doz. blooms	10 0–12 0	— Pheasant's Eye, per doz. bunches	2 0– 3 0
Cypripedium insigne, per doz. blooms	2 6– 3 6	— Soleil d'Or, per doz. bun.	1 6– 2 0
Daffodils, single yellow, per dz. bunches	2 0– 5 0	Odontoglossum crispum, pr. dz. blooms	2 0– 3 0
— double, per dz. bunches	3 0– 5 0	Pelargoniums — (Zonal) double scarlet, per doz. bunches.	4 0– 8 0
— Emperor	4 0– 6 0	— salmon and pink, per doz. bunches	6 0– 8 0
— Golden Spur, per doz. bun.	3 0– 5 0	Roses, Niphetos, pr. dz. blooms	2 0– 3 0
— Henry Irving, per doz. bun.	5 0– 6 0	— Bridesmaid, p. doz. blooms	4 0– 6 0
— princeps, per doz. bunches.	3 0– 4 0	— Kaiserin A. Victoria, per dozen blooms	6 0– 9 0
— Sir Watkin, per doz. bun.	4 0– 6 0	— General Jacqueminot, per dozen blooms	3 0– 5 0
Dendrobium nobile, doz. blooms	2 6– 3 0	— C. Mermet, pr. dozen blooms	4 0– 6 0
Eucharis grandiflora, per dozen blooms	3 0– 4 0	— Sunrise, per dozen blooms	3 0– 4 0
Euphorbia jacquiniæflora, bunch	1 6– 2 6	Tuberoses, on stems, per doz. bunches.	18 0–24 0
Gardenias, per dz. blooms	2 0– 3 0	Tulips, doz. bun.	6 0–12 0
Hyacinths, Roman, per doz. bun.	6 0– 8 0	— special double varieties, per doz. bunches	18 0–24 0
Iris Germanica, p. bunch	1 0 —	Violets, blue, English, per dz. bunches	1 6– 3 0
Lilac (English forced), per bun.	3 0– 4 0		
Lilium lancifolium rubrum and album, per bunch	2 6– 3 6		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Artichokes, Globe, per dozen	3 0– 3 6	Leeks, doz. bndls.	1 6 2 0
— Jerusalem, p. sieve	1 0 —	Lettuces, Cabbage, per dozen	1 3– 1 4
Asparagus, bunch	5 0 —	Mushrooms (house) per lb.	0.10–1 0
— Giant	25 0–35 0	Onions, pickling, per sieve	5 0– 6 0
— Paris Green	4 6– 5 0	— English, cwt.	15 0–15 6
— Spanish, bunch	1 6 —	— Dutch, p. bag.	12 0–12 6
— Sprue, p. doz.	11 0 —	— Valencia, case	14 0–15 0
Beans, dwf., p. lb.	1 6– 1 9	Parsley, 12 bunch.	1 6– 2 0
— Madeira, per basket	2 0– 3 0	Parsnips, per bag	3 0– 3 6
Beetroot, bushel	1 6 —	Peas, French, pkt.	0 5 —
Broccoli, Sprouting, bag	1 6– 2 0	— frame-grown, lb.	4 0 —
Brussels-Sprouts, sieve	1 0– 1 6	Potatos, per ton	50 0–90 0
Cabbages, p. bag	1 6– 2 0	— Frame, lb.	0 6– 0 7
Carrots, 12 bunch.	2 0 —	— Jersey, lb.	— —
— bag	2 0– 3 6	— Teneriffe, cwt.	10 0–14 0
Cauliflowers, doz.	1 9– 3 0	Radishes, 12 bnch.	0 7 –2 0
— Cherbourg dz.	1 0– 1 6	Rhubarb, York, per dozen	1 0– 1 1
— St. Malo, doz.	2 0– 3 0	Salad, small punnets, per doz	0 9 —
Celeriac, per doz.	2 0– 3 0	Savoys, per tally	4 0– 6 0
Celery, per dozen bunches	6 0–12 0	Seakale, per doz.	10 0–14 0
Cress, doz. pun.	0 9 —	Shallots, p. sieve	5 0 —
Cucumbers, doz.	4 0– 7 0	Spinach, bush.	2 0 —
Curled Kale, bush.	1 0 —	Tomatos, p. bunch	8 0–14 0
Endive, per doz.	2 0– 2 6	— English, p. lb.	1 3 —
Garlic, per lb.	0 3– 0 4	Turnips per doz.	1 6 —
Greens, bushel	1 0– 1 6	— per bag	1 6– 2 0
Horseradish, foreign, p. bunch	0 8 —	Turnip-tops, bag	1 6 2 0
Mint, per dozen	3 0– 6 0	Watercress, per doz. bunches.	0 6 0 7

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Anemones, pink, per dozen bunches	2 0– 3 0	Marguerites, per doz. bunches.	2 0– 3 0
— fulgens, per doz. bunches.	3 0– 4 0	Mimosa (Acacia), per basket	6 0– 8 0
Carnations, per doz. bunches.	9 0–12 0	Narcissus, per basket	4 0– 8 0
Fern, French, per doz. bunches.	6 0 —	Ranunculus, per doz. bunches.	9 0–12 0
Freesias, p. doz. bunches	2 0– 4 0	Violets, blue, per doz. bunches.	1 0– 2 0
Lilac, per bunch.	2 6– 3 6	— Parma, per large bunch	2 6– 3 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Asparagus plumosus, long trails, each	0 9– 1 0	Galax leaves (American), per dozen bunches.	2 6 —
— — medium, each	0 4– 0 6	Ivy-leaves, bronze	1 6– 2 0
— — short sprays per bunch	1 0– 2 6	— long trails, per bundle	1 0– 2 0
— Sprengeri	0 9– 1 6	— short green, per dozen bunches	1 0– 1 6
— tenuissimus	0 9– 1 0	Myrtle, doz. bun.	3 0– 4 0
Adiantum cuneatum, doz. bun.	6 0– 9 0	Smilax, p. dozen trails	4 0– 6 0
Croton leaves, doz.	1 0 2 0	Hardy foliage (various), per dozen bunches	3 0– 6 0
Cycas leaves, each	1 0– 1 6		
Fern, English, p. dozen bunches	3 0– 4 0		

Fruit: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Apples, bushel	2 0– 7 0	Grapes, Gros Colmar, per lb.	1 9– 3 0
— English, sieve or half bushel	1 6– 3 0	— Alicante, per lb.	1 6– 3 0
— — per barrel.	10 0–20 0	— Almeria, doz. lb.	5 0– 8 0
— Newtown Pippin	55 0–70 0	— — per barrel.	12 0–20 0
— — per case	20 0–25 0	Lemons, per case	8 0–24 0
Bananas, bunch.	7 0–11 0	Oranges, per case	8 0–60 0
— loose, per dozen	1 0– 1 6	— Blood	7 0– 7 6
Chestnuts, per bag	14 0 —	— Navel	12 0–16 0
Cobnuts per lb.	0 6½ —	— Jaffa, per box	10 0–12 0
Cranberries, per box	13 0 —	— Seville	6 0 —
Custard-Apples, per dozen	5 0–10 0	Pears, Easter Beurré, per case	30 0 —
Grape-Fruit, per case	16 0 —	Pines, each	2 0– 4 0
		Strawberries, A., per lb.	8 0–12 0
		— — B., per lb.	3 0– 6 0

POTATOS.

Dunbars, 80*s.* to 90*s.*; various, home-grown, 55*s.* to 75*s.* per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

REMARKS.—Prices remain much the same. The Peas quoted are frame-grown and come from Guernsey. Grape fruits per case 16*s.*; Custard Apples, 5*s* to 10*s.* per dozen; Cape Plums, per case, 6*s.* to 10*s*; Peaches, 5*s.* to 10*s.* ditto; Nectarines, 8*s.* to 15*s.*, ditto; Pears, 4*s.* to 7*s.*, ditto; Grapes, 7*s.* to 20*s.* ditto. There has been no Argentine-grown fruit during the past week. Apples, English Blenheim, per bushel 6*s.*; Wellingtons, 7*s.* ditto; Golden Knobs, 5*s.* to 6*s.*, ditto. The Easter Beurré Pears quoted are from Calaifornia. New season green Onions, 3*s.* 6*d.* per dozen bundles.

COVENT GARDEN FLOWER MARKET.

AZALEAS continue to make the greatest show; it is questionable if they have ever before been marketed in such quantities as they have been this season; some realise good prices, but many are cleared at a loss. Azalea mollis is not over plentiful. Erica Cavendishi is now to be had in well-grown plants, those in 48's realising 24*s.* per dozen. E. Wilmoreana and E. persoluta are also good. The same applies to Boronias and Acacias. Cinerarias make a bright show. Genistas are plentiful, and sell moderately well. Supplies of Cyclamen still hold out, and good plants of these are obtainable, although many are of second quality. Marguerites sell more readily; if the weather continues mild these will be in demand for window-boxes. Daffodils in several sorts are good. Deutzia gracilis, also Spiræas, chiefly S. japonica, some S. multiflora compacta and S. astilboides floribunda, are seen. Spikes of Polygonatum multiflorum (Solomon's Seal) are very pretty; these make about 10*s.* per dozen. Hydrangea Thomas Hogg is already seen, but the plants are dwarf with several heads of bloom; they were realising 9*s.* per dozen. Plants of Rhododendron Cunningham's White are well flowered, and make from 2*s.* to 3*s.* each. Lily of the Valley in pots is good, at from 18*s* to 30*s.* per dozen. Begonia Gloire de Lorraine still holds out, but several growers have finished marketing these for the season. Well-flowered plants of the old double white Primula sinensis are seen, but these seem to have gone out of favour, and do not sell readily. Among foliage plants there are still good supplies. Ferns sell more readily, but there is not a great demand for Palms, and it is rarely that growers can clear their stands by closing time, unless they accept prices considerably below ordinary market quotations. For hardy roots, &c., trade has revived; and should a few days' mild weather continue the Pansy trade will be busy.

CUT FLOWERS.

Supplies are very large from all sources, and as is usual early in Lent, trade has fallen off considerably. It is difficult to give even approximate prices, for much of what is now on the market has to be cleared out for what it will fetch. Lily of the Valley, which was scarce at the end of last week, is now plentiful. Lilium longiflorum is down to 4*s* or 5*s.* per bunch. Roses, especially the variety General Jacqueminot, are considerably cheaper, being down to 2*s.* per dozen. Carnations are also plentiful. We are now getting a great variety in Narcissus, large quantities coming from the Channel and Scilly Islands. Home growers are also sending in large supplies. Tulips are not quite so plentiful, and good prices are maintained. Gardenias are now more abundant and sell slowly at low prices. Supplies of Eucharis are short and prices have advanced. Few Tuberoses are seen. Violets are plentiful, these arrive chiefly from France. English-grown Lilac is abundant. Orchid flowers are not so numerous as they were last week. Few Cattleyas are seen. Supplies of all kinds of cut foliage continue plentiful. Hardy Fern fronds (British) are still good. The uprooting of our native Ferns has started again. They are seen in sackfuls. In the market strong roots that have taken years to establish are sold at very low prices. *A. H., Wednesday, March* 8.

ENQUIRY.

"HARE PIPES." — Can any reader tell me whether this is a form of net used in decoying wild fowl? or a small wooden pipe with which to imitate the cry of a hare and decoy within range of a shot-gun? *H.*

ANSWERS TO CORRESPONDENTS.

⁂ Editor and Publisher.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Acacia dealbata: *J. N. H. W.* We believe it is correct to say that the species of Acacia known in Covent Garden Market as "Mimosa" is A. dealbata, but cannot say whence the term "Mimosa" arose, unless at one time Mimosa was made to include Acacias. The true Acacias are Australian. A. dealbata flowers much earlier than July in this country in greenhouses. The French edition of Nicholson's *Dictionary of Gardening* gives March as the flowering period.

Annual Grape: *H. L.* This story is a very curious one, but you need pay little attention to it. The Vine seen cropping so well in Wales was probably grown in a pot, and the owner might reasonably have said that he raised a fresh plant for his particular purpose each year, but not from seeds.

Ants in Greenhouses: *Amateur Gardener.* Find out where their nests are located, and pour boiling water over the spot. There is a remedy known as the "Ballikinrain Ant-Destroyer," which is said to be very effectual; but it is also a virulent poison, and should not be stored without a Poison label on it.

Begonias: *J. H. P.* You do not tell us under what circumstances the plants were grown. The leaves look as if they had been scorched when damp; or have you been using some insecticide too strong, or fumigating too severely?

Books: *V. C., Paris.* *Thompson's Gardeners' Assistant*, new edition, by W. Watson. Price, 52*s.*, post free, obtainable from our Publishing Department.—*C. P.* *A Dictionary of English Names of Plants*, by William Miller, includes those of trees and shrubs. It may be obtained from our Publishing Department, price 12*s.* 6*d.*, post-free.—*Orchid.* *The Book of Orchids*, by W. H. White, price 2*s.* 9*d.* post-free; or a more comprehensive work is *Orchids: Their Culture and Management*, by W. Watson and H. J. Chapman, price 25*s.* 6*d.* post-free from our Publishing Department.

Collection of Annuals: *A. B. C.* In the class to which you draw our attention no species that are not true annuals should be exhibited. An annual is a plant that grows from a seed, flowers, and dies in the same year.

Coreless Apples: *H. L.* See *Gardeners' Chronicle* for December 24, 1904, p. 446; also February 25, 1905, p. 121.

Crickets: *J. G. D.* See answer to "G. W. B." on p. 128 of our issue for February 25.

Cyclamen Flowers Eaten: *A. S.* The insects you have forwarded are the common weevil. They feed principally in the night, which is the best time to catch them. Trap them with pieces of Carrot or Potato, and examine the traps by the aid of a lantern.

Flowering of Figs: *Ficus.* The flowering stage precedes that known to gardeners as the "second swelling." The true fruits are what are usually spoken of as seeds in the Fig. The edible portion is not strictly a fruit, but a swollen branch in whose cavity the flowers and fruits are borne. Cut one of the receptacles (fruits) open at various dates previous to the ripening process, and you will find the contained flowers more or less open in some of them. Figs generally are unisexual, but occasionally male and female flowers are contained in the same receptacle, the male flowers near to the orifice at the end of the receptacle, and the female flowers in the concavity near to the stalk. In English fruit-houses fertilisation seldom takes place, and the so-called "fruits" are therefore as a rule seedless. Directly after the flowering stage Figs are apt to drop from the trees, especially when forced early in the year.

Humea elegans: *A. B. C.* The leaves are attacked by the well-known fungus disease. If only two of the twenty-four plants are attacked these should be isolated at once.

Laurel Shoots: *G. J.* The blisters are due to an excess of moisture in the soil. The plants are free from insect and fungus pests.

Lecture on Fruit Culture: *V. C., Paris.* We expect you mean a lecture which Mr. T. A. H. Rivers delivered before the members of the Horticultural Club in 1902, of which a short report was published in our issue for Oct. 25, 1902, p. 314. A fuller report was printed in the *Journal of the Royal Horticultural Society*, vol. xxvii., p. 625, which may be purchased on application to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, London. Procure a copy of *Fruit Trees in Pots*, a new work by Josh Brace, price 5*s.* 3*d.* post free from our Publishing Department.

"Manna": *T., Transvaal.* It has nothing whatever to do with Manna. The plant is Setaria italica var. Italian Millet.

Names of Fruits: *W. R., Sandy.* 1, Gooseberry Apple, not Gooseberry Pippin; 2, not recognised; 3, Hunthouse; 4, Sweet Lading; 5, Allen's Everlasting, gathered too soon; 6, Nelson Codlin.—*H. D. P.* Maltster.—*T. Cross.* Your Apple is Beauty of Hants. It is a type of Blenheim Pippin, and a few trees are to be found throughout the country, especially in Kent, where it is named "Bastard Blenheim." The fruit is distinguished from that of Blenheim Pippin by the eye, which is much smaller; the colour of the fruit is more brilliant, and there is a thin patch of russet round the stem. Its quality for dessert or cooking is quite equal to that of Blenheim Pippin.—*E. N. H.* The fruit was bruised beyond recognition. Send other specimens earlier in the season next year, and pack them more carefully.

Names of Plants: *H. G. C.* The big one is Correa speciosa var. Backhousiana, and the small-flowering species C. alba.—*T. C.* 1, Cypripedium × auroreum (Lawrenceanum × venustum); 2, C. × hybridum, two flowers; 3, C. × Sibyrolense (Boxalli × insigne), not a good form; 4, Dendrobium × Ainsworthii. The labels on 2 and 3 were detached.—*J. H. W., Genève.* Miltonia Warscewiczii, often seen in gardens named Oncidium fuscatum and Odontoglossum Weltoni.—*W. B. B.* 1, Nephrolepis tuberosa. You should send fertile and barren fronds of Ferns where possible; 2, Azalea indica, probably Deutsche Perle; 5, Sparmannia africana.—*H. L. N.* It is very difficult to name Conifers without the cones. Your specimens are, however, good ones—a contrast to most that we receive. Some of your specimens were named last week. The others are, we believe, as follows:—1, Cupressus sempervirens; 3, Juniperus virginiana; 4, a Pinus about which we are doubtful—it may be P. cembroides; 5, Juniperus communis var. fastigiata; 6, J. virginiana var. Schotti; 8, Pinus excelsa; 12, Juniperus virginiana.—*G. E. P.* Omphalodes verna, very near to but not the same as Myosotis.—*G. P.* The Fern is Doodya media, the other is the Retinospora stage of Cupressus funebris.—*G. P.* Odontoglossum × Andersonianum, of good quality.

Onion-growing on a large scale: *R. M.* If you had furnished us with a few particulars of the land you intend to crop with Onions on a large scale, and informed us whether it had been recently in cultivation, and if so, how cropped, we should then have been in a better position to advise you as to the preparation of the ground for the reception of the seed. However, we will assume that your land was cropped last year and in previous years with roots or cereals, and that it was ploughed up last autumn. This being so, it should now be well harrowed, if this has not been already done. Should the soil be at all lumpy, let it be rolled, and then dress it with artificial manures at the rate of 5 cwt. per acre. These manures may consist of 2 cwt. of guano, 2½ cwt. of superphosphate of lime, and ½ cwt. of muriate of potash. Then harrow the surface again, and afterwards strew fresh soot over the ground in sufficient quantity to discolour the surface, prior to sowing the seed in shallow drills at from 12 to 15 inches asunder. Twelve pounds of Onion-seed will be sufficient to sow an acre of ground for "bulbing" purposes; but should you desire to have the young plants come up sufficiently thick in the rows to admit of their being thinned-out, bunched, and sent to market for salading, 15 lb. of seed per acre will be required. An American seed-sowing machine of the right size should be used for drilling in the seed, afterwards rolling over the ground so as to compress the soil. If the land was given a liberal dressing of farm-yard manure for last year's crop, the artificial manures need not be applied, as a dressing of soot will be ample, for this is not only an excellent purifier of the soil, but is also a powerful fertiliser. But should the ground be in poor condition a dressing with artificial manures as indicated above will be very valuable, the soot being strewn over the land immediately before sowing the seed. This application of soot will probably save the crop from the attacks of the wire-worm and Onion maggot (Anthomyia ceparum). It is too late in the season now to dress land intended for Onions with farmyard manure, and the sooner the seed is put in the better prospect there will be of securing a remunerative crop. We may add that freshly-broken-up meadow land of a somewhat light sandy, loamy nature reduced to the desired degree of finness, and otherwise treated as described above, will yield first-rate crops of Onions, or of any other kind of bulbs or roots for the matter of that. Danver's Yellow, James's Keeping, and Main Crop, are good varieties of Onions to grow for the supply of the market.

Peach Leaves: *W. M.* Kindly send us some specimens of the leaves which have become curled.

Pines: *Scots, W. S.* The Spruces are attacked with a gall insect, a species of Chermes. The Pine-trees are attacked by a fungus, the white spawn of which is very conspicuous. Look about and see what fungi are growing on or near to the trees. The fungus is quite sufficient to account for the death of the shoots.

Primula: *A.* The blooms are so small that we do not recognise them for the species you name. The protrusion of the style, "pin eye," is natural in some Primroses. Please send a leaf.

Richardia with Double Spathe: *R. W. R.* This is not at all uncommon. We receive many specimens every season. The donation has been given to the Gardeners' Royal Benevolent Institution.

Seedling of Pteris Fern: *A. B. C.* The pretty variegated form you send is nearest to P. Victoriæ, a plant distributed by Messrs. W. Bull & Sons some years ago. Your plant may be distinct, and in that case would be worth keeping.

Tarred Boxes: *A. L.* If tar be used, the boxes should not be employed for some time afterwards, but we should prefer not to use it.

Twining Plant: *R. L. P.* The plant you send on the Pelargonium is a Dodder—Cuscuta europæa, a parasitical plant which feeds on the Pelargonium. It probably sprang from seed in the peat.

Violet: *C. H. Kent.* The large double light-coloured Violets you send under the name of "Miss Naylor" are extremely pretty and powerfully fragrant, but whether the variety is distinct from all others we cannot say.

Violet Leaves: *J. C.* There is no fungus present, and the bleaching of the leaves, always commencing at the edge and working inwards, suggests some ammoniacal or other exhalation from a fertilizer present in the soil.

Communications Received.—F. S.—S. W. N.—H. H. G.—Karl Dinter, Windhoek, S. W. Africa—J. H. V.—J. Rashleigh—L'Etoile Belge—W. P. W.—J. R.—N. B. H. & Sons—J. C.—T. F.—Sutton & Sons—G. C.—A. Shakelton—A. & Son—W. H. W.—Yew Tree—W. W.—W. Simpson—H. H. S.—Mushroom—Old Reader—T. C. H.—J. W.—A. G.—F. Street—Amateur Gardener (next week)—E. H. J.—S. W. N.—H. W. W.—W. A. C.—T. C.—C. W. M.—W. M.—J. D.—R. P.—J. O'B.—J. F. T.—J. Lawson—J. F. D.

THE Gardeners' Chronicle

No. 951.—*SATURDAY, March* 18, 1905.

CONTENTS.

Bamboo and its uses in the garden ... 165
Books, notices of—
  Botanical Magazine 170
  Gooseberry Growers' Register 169
  Illustriertes Handbuch der Laubholzkunde... ... 169
  Manual of Forestry 169
  Vegetables photographed from Nature 169
Books, uncut 171
Border, plants suitable for a north 176
Climate and cultivation 161
Corruption, Bill for prevention of ... 168
Crocus Malyi 163
Cryptomeria japonica, large specimens of... 170
Daffodils and skin irritation 171
Daffodils, early-flowering varieties of ... 169
Drip in plant-houses, appliances to prevent 162
Eckford, Mr. H., testimonial to 168
Events of the week ... 163
Ferns, the culture of hardy 170
Fruit Committee, the Departmental ... 168
Gardener, presentation to a 169
Gardeners' Association, the British ... 171
Grape-fruit, the ... 171
Hybridisation of plants 169
Isleworth garden, notes from an 164
Kew notes 163
Obituary—
  Cocker, Mrs. 170
  Crook, T. M. 170
Orange-trees, the potting of 176
Orchid notes and gleanings 165
Peaches, early 170
Potato-cooking test, a 164
Seed-packing for transit 163, 171
Shamrock, the 169
Societies—
  Manchester & North of England Orchid 174
  National Fruit Growers' Federation 174
  Royal Horticultural 171
  United Horticultural Benefit and Provident 174
Thunbergia natalensis 162
Vegetables—
  The best culinary Peas 166
Vegetables, illustrations of 169
Violets from Scotland 171
Water supply, the year's 171
Week's Work, the 166, 167

ILLUSTRATIONS.

Arcade, an, made of Bamboo 165
Bougainvillea spectabilis growing on the walls of the dwelling of Mr. Henry Fisher, Redlands, California (Supplementary Illustration)
Cantua buxifolia, a handsome greenhouse flowering shrub 173
Crocus Malyi 163
Flower-holder made of Bamboo 165
Thunbergia natalensis growing in the Cambridge Botanical Garden... 162

CLIMATE AND CULTIVATION.

OUR old correspondent, Mr. Challis, of Wilton House Gardens, is recognised as a first-class, all-round gardener, but it is not so generally known that he has been for years a patient and keen meteorological observer. The remarks that he made at the meeting of the Bath Gardeners' Society last week have therefore a double value. We must, from considerations of space, omit the introductory portions, in which Mr. Challis dealt with the well-known facts of the constitution of the atmosphere and cognate matters, and pass on to his remarks on climate in its relation to practical horticulture.

"The more practical side of this subject will be perhaps better considered, first, with reference to the climate in the open-air; and secondly with regard to the more artificial, because comparatively confined, atmosphere of the hot-house.

In selecting a site for a residence, a gentleman naturally chooses first that which he believes will best contribute to the health and comfort of his family and household, then most probably he will have a thought for horses and stables, and then perhaps for the cows and the dairy, piggery and fowlery, and for his garden, which last is frequently relegated to a position that is neither suitable nor salubrious, either with regard to climate, aspect, or soil; and the poor gardener has to endeavour to surmount difficulties over which he has little or no control whatever. In olden times, when the raising of an efficient water supply for garden use was a much more difficult and expensive operation than it is now, there was reasonable excuse for gardens being located in the valleys near the rivers. Unfortunately, such positions are generally the most unsuitable, as they occupy the hottest, the coldest, and the dampest localities—the hottest, because when the sun shines they are sheltered from the cooling breezes that would otherwise temper its rays; the coldest, because when the sun sets the air near the adjoining hill becomes condensed, and by reason of its increased weight is by the laws of gravitation forced down the sides of the hills into the valleys, where it displaces the warmer and lighter air, and where it remains until it again becomes rarefied by the returning sun. The valleys are the dampest position, because the vapour rising from the rivers becomes condensed by the cold air, and then remains stagnant.

There is ample evidence of these facts almost every day during the autumn, winter, and spring seasons, when a dense fog may be seen remaining in the valleys, while the surrounding hills are comparatively clear and sometimes bright. I have myself frequently found the temperature of the air in a valley to be 28° or 30°, while at the same time that of the air at a moderate elevation, only half a mile distant, was 40° to 45°. We need no longer wonder that tender subjects should be destroyed in the valleys while similar plants on the surrounding hills are perfectly safe and uninjured.

To choose the best position and aspect for a garden is not always an easy task without having had some previous meteorological experience of the locality. Some experts choose a south or south-western slope at a moderate elevation above the valleys, while others prefer a south-eastern slope. Those who favour the former position say that the latter is subject to the sudden changes of temperature by being exposed to the ill-effects of the early morning sun after a severe frost, while the advocates of a south-eastern slope, especially the fruit growers, assert that the fierce south-westerly gales are more to be feared than spring frost. I am rather in favour of the latter view, especially if an efficient protection by trees be afforded against north-east winds during the spring season. I should prefer to risk losing a few exposed buds by frost in spring than have to endure the chance and disappointment of seeing a full crop of fruit swept off the trees by a few hours' fierce gale in autumn.

The climate of a garden may be greatly improved by the erection of suitable brick walls, also by planting Yew, Hornbeam, or Holly hedges, which not only serve to break the force of wind, but also tend to lessen the excessive evaporation of moisture from tender plants by cold currents of air. It is, however, the providing of well-built garden walls, permanently coped with glass and protected in front during the early and late spring frost months with three or four thicknesses of ordinary Strawberry netting, that should be the acme of the gardener's ambition with respect to fruit-tree cultivation. Such structures are not only comparatively economical, but they also at all times supply just the amount of protection required to guard the trees from frost and also from intense sun-heat. From such structures, where the trees are judiciously cultivated, both with respect to the roots as well as the branches, and where the walls are completely covered by the trees, the crop, I may safely say, never fails, for in the never-to-be-forgotten disastrous year 1903 I saw such structures well furnished with an abundance of every kind of fruit, whilst in the open garden and orchard not a single respectable dish could be found or obtained.

Protection from extreme cold, intense sun-heat, excessive evaporation and nocturnal radiation should, I venture to think, exercise the gardener's mind to a much greater degree than it has done hitherto. We should bear in mind that the radiating force of the sun's rays, also the nocturnal radiation force from the surface of the earth, is much greater in this latitude than it is in more temperate or even tropical regions, and as we cultivate plants and trees chiefly obtained from warmer climates than our own, this practice of protection cannot be sufficiently emphasised. That the radiating force of the sun's rays is much greater in this latitude than it is under the Equator has, I think, been fully verified by meteorologists of exceptional repute.

It has been proved that the radiating force of the sun in the tropics seldom exceeds 25° to 30°, whereas in this country it is frequently as much as 45° and 50°, and even 60° and 65°. The greatest force often occurs during the late spring, and if accompanied, as is often the case, by a low atmospheric temperature, the excessive evaporation that takes place under such conditions is exceedingly detrimental to the tender fruit blossoms and foliage, as also to tender plants where unprotected, for instead of there being present in the atmosphere 60 or 70 per cent. of moisture, which is the amount they require, it may be reduced to 10 or even 5 per cent., which must, if of long duration, most certainly prove fatal. Under such circumstances protection is not only necessary to fruit-trees, but it is equally so to tender plants and seedlings in the open garden, especially to those that have been recently transplanted. The shelter of a garden-mat or similar material suspended a few inches above the plants so as to avoid contact with them, and to enclose a still body of air underneath, will almost certainly guard them from injury. Similar protection is equally if not more essential to guard tender plants from the destructive effect of nocturnal radiation.

When after a bright, sunny day the sun has disappeared, the surface of the ground on a calm, cold night radiates its heat into the atmosphere to such an extent that it often becomes several degrees colder than the air immediately above it, so that even in midsummer plants growing close to the ground are liable to be frozen, while the temperature of the air 4 feet above is 4° or even 6° higher.

Meteorologists account for the comparatively weak sun power in the tropics with that in this country by saying that it is chiefly due to the cooling effect of the much larger volume of vapour that is always present there, and more especially to the cooling effect of the extremely elastic condition of that vapour, which simply means that by a peculiar yet most wonderful law of Nature the sun itself creates a limit to its own destructive powers, otherwise in the tropics vegetation would in a few seconds be destroyed by its perpendicular rays.

With regard to the more artificial climate of the hothouse, which is a subject of the greatest interest and importance, although it is not unattended with difficulties, yet it is much more under the gardener's control than is the climate in the open-air. Gardeners, speaking generally, study and observe one element of climate only—viz., heat. The thermometer is to them the only index to the climate they are so desirous to provide and maintain. Such sticklers are they, and so precise as to this element, that the young gardener in charge had far better never have been born than allow the thermometer to rise one degree higher or sink one degree lower than the prescribed limit.

It is perfectly true that in tropical regions, whence the inmates of our hot-houses are derived, the temperature is much more equable than we in our variable climate can possibly hope to ensure for them. If this be true with regard to temperature, it is equally or even more so with regards to atmospheric moisture. This element therefore should be regulated with the same care and the same scientific precision as that of temperature.

It is generally admitted that alternate periods of growth and rest are essential to the welfare of the occupants of the hot-house, and the temperature is again carefully regulated to that end, but not so with the atmospheric moisture. Water is thrown indiscriminately about the paths and walls, while at other times they are allowed to become too dry, and the results are often visible by the plants becoming spotted and diseased on the one hand, and and shrivelled on the other.

The atmosphere in the tropics during the growing seasons is always highly charged with moisture, seldom less than from 75 per cent., and occasionally 100 per cent.; whereas in our hot-houses, as at present managed, the amount of moisture would, if tested with the hygrometer, often be found as low as 60 or even 50 per cent. for hours together. During the resting periods in the tropics the plants are subjected to lengthened and excessive dryness by day, but as a rule in our hot-houses through the winter or resting season the atmosphere is kept even damper than it is at midsummer. It need then be no longer a matter of surprise that plants which depend to such a large degree during the growing seasons on a specific amount of moisture in the air for their sustenance, and also during their resting seasons on a specific amount of dryness in the air during the day for their solidifications, should so often dwindle and die under the unsuitable, ill-regulated, and unnatural climate that is too often provided for them.

It may be said, "Why trouble about these theoretical scientific questions when good results can be produced by old-fashioned practical gardeners without them?" Does this remark refer to the old-fashioned practical man who one frosty morning was asked by his anxious master if the thermometer in the Orchid-house was all right, replied, "Yaas, meister, he be all right now; he wur a bit low this yer morning, but I blowed on un, and soon fetched un up to scratch"? Or does it allude to the successful, practical gardener, who is a keen observer, a plodding, persevering, methodical man, who works to some extent scientifically, without properly understanding the theory or groundwork of his practice? Why, allow me to ask, are English artizans inferior to the French in designing, and the Germans in finishing of manufactured goods? Simply because we as a nation are just a little too practical, and somewhat deficient in theoretical, scientific, and technical knowledge, compared with our continental rivals.

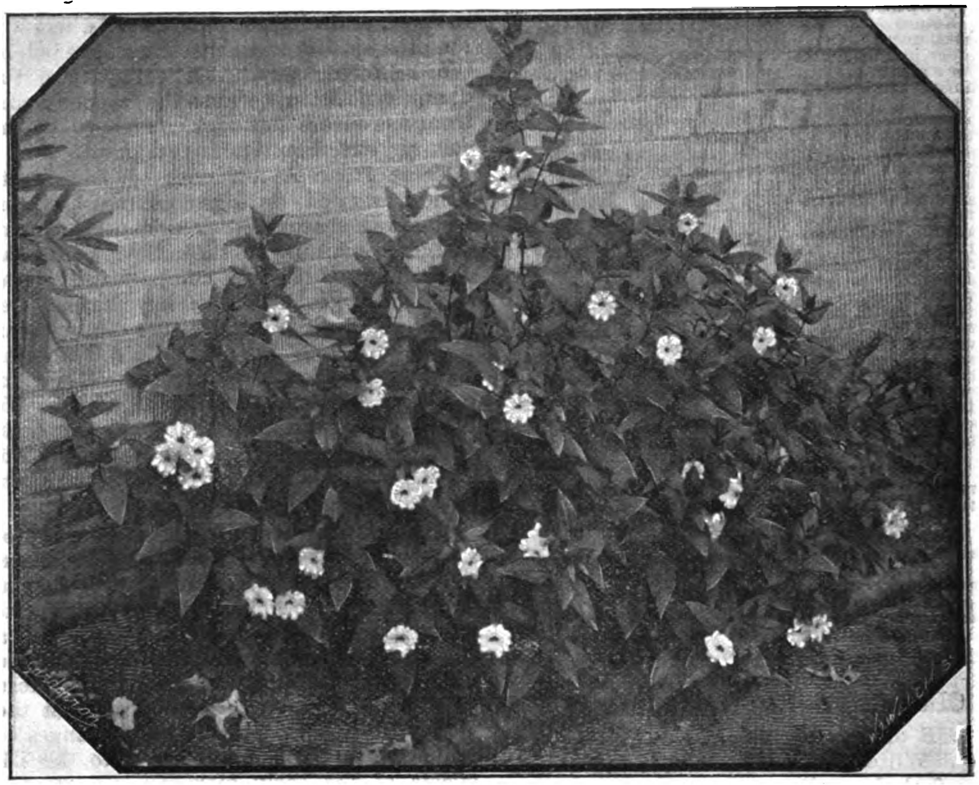


Fig. 65.—Thunbergia natalensis growing in the Cambridge Botanic Garden. Colour of flowers pale blue.

Practical knowledge is excellent, but when combined with sound theory it is infinitely more so. Above all, then, gardeners should adopt as their guide through life an open hand, open eyes, open ears, open mouth, open mind, and, last though not least, an open heart."

THUNBERGIA NATALENSIS.

This charming species from S. Africa is not generally known to be hardy, but it can be grown out-of-doors in the south and midland counties if provided with a sheltered position and protection afforded by some rough litter placed about its crown during severe winter weather. The photograph reproduced at fig. 65 was taken last August and represents a plant in the Cambridge Botanic Garden growing against a wall of a cool greenhouse facing to the south-east, a position it has occupied for several years. The plant grows about 3 feet high, and is very pretty during the summer when studded with its pale-blue flowers, which have a rich yellow tube. It is figured in the *Botanical Magazine*, t. 5082. A succession of flowers is maintained for about two months or more. It is worthy of a place under glass, and will make a good mass if planted in a cool greenhouse where the sun's rays will reach it. *E. J. Allard, Botanic Garden, Cambridge.*

FOREIGN CORRESPONDENCE.

APPLIANCES TO PREVENT "DRIP."

I think still greater improvements in sash-bars are possible than those prepared by Mr. Brewer, p. 86, and Mr. Tallack, p. 138 [which were appliances for preventing "drip" in houses already erected. Ed.]. I send you figures representing sash-bars such as have been employed for many years past in America, and are now in common use in Germany and other countries. Even here, in Sweden, we have commenced to use them, but have hitherto had to get them made by hand, as the mills have not found customers enough to induce them to change their machines, or construct machines for this special work. That will not be the case in England; if nurserymen or gardeners demand a new model they will get it at once. I need not say much about the great advantages of this sash-bar—they are apparent to anyone. From a saw-mill they should be obtainable at the same price as the plain ones without grooves. Perhaps some nurserymen and market gardeners will say that drip is of no consequence; but I never saw a figure in *The American Florist* of large Rose and Carnation-growing establishments in America which has not shown grooved sash-bars. There may be more "drip" in America because of the harder winters and consequently more firing; but there seems to be a demand for such a bar in England. *M.P., Jönköping, Sweden.* [The drawings enclosed by our correspondent represent similar grooved sash-bars to those figured in our last issue, p. 155, and can only be used for new houses or when re-roofing old ones. Ed.].

SEED PACKING.

In the *Gardeners' Chronicle*, February 11, 1905, on p. 90, there appeared a short article on "Seed Packing" by Mr. William Watson, of the Royal Gardens, Kew. Mr. Watson recommended moist cocoa-nut fibre as packing for the transportation of seeds which lose their vitality on drying. There are many seeds which belong to this class, and the method recommended by Mr. Watson is a most excellent one.

Further, Mr. Watson says: "For seeds generally I know of nothing better than paper packets or calico bags; and the more moisture there is in the seeds themselves when thus packed the better. Hermetically sealed tins or bottles should never be used." Carefully-conducted experiments have given results which are diametrically opposed to those set forth by Mr. Watson. By far the vast majority of seeds retain their vitality the better the more thoroughly they are dried. Seeds put up in paper packets or cloth bags may remain germinable for a number of years if kept in a dry climate; on the other hand, seeds put up in the same manner, and sent to places having warm, moist climates, deteriorate very rapidly. But in all cases, excepting the special kinds of seeds which lose their vitality on becoming dry, the best results are obtained when seeds are carefully dried and packed in hermetically sealed containers. When prepared in this manner the seeds must be dried at a temperature slightly higher than any degree of heat to which the sealed containers will be subjected. Seeds prepared in this way will remain viable in any climate. This applies particularly to agricultural and garden seeds of the temperate regions. Many seedsmen now use the hermetically sealed containers for the transportation of seeds, especially those which are sent to tropical and subtropical countries.

The following data, taken from a long series of experiments, will show the advisability of carefully drying seeds and packing in air-tight containers to guard against the entrance of any moisture:—

Cabbage and Onion seed stored at Mobile, Alabama, for 131 days, from December 20, 1901, to April 30, 1902, in paper packages and in sealed bottles respectively, showed the following germination:—Cabbage from the envelope, 60 per cent.; from the bottle, 84 per cent.; Onion seed from the envelope, 19·5 per cent.; from the bottle, 86 per cent. (See Bulletin 58, Bureau of Plant Industry, U.S. Department of Agriculture, "The Vitality and Germination of Seeds.")

Unpublished data are as follows:—Onion seeds from paper packages, after being stored one year in Kingston, Jamaica, germinated only 4 per cent., while seed from sealed bottles germinated 87 per cent. The same from Puerto Principe, Cuba, gave 0 per cent. and 82 per cent. respectively. Lettuce seed stored one year in Manila, Philippine Islands, germinated 0 per cent. and 95 per cent. respectively; Bridgetown, Barbados, 0 per cent. and 94 per cent. respectively from the envelopes and bottles. The greatest factor in causing the loss of vitality in seeds of the field or garden is moisture. *J. W. T. Duvel, U.S. Department of Agriculture, Washington, D.C., U.S.A.*

PLANT PORTRAITS.

NICOTIANA SANDERÆ ×, *Revue de l'Horticulture Belge*, February.

ARBUTUS UNEDO, *Revue de l'Horticulture Belge*, February.

MUSA PARADISIACA RUBRA, *Revue Horticole*, February.

MAGNOLIA HYPOLEUCA, *Mitteilungen der Deutschen Dendrologischen Gesellschaft*, 1904.

EUPHORBIA (POINSETTIA) PULCHERRIMA PLENISSIMA, a variety in which the coloured bracts are increased in number though diminished in size, *Le Jardin*, March 5.

KEW NOTES.

CROCUS MALYI.—Whilst the genus Crocus contains upwards of seventy distinct species, there are scarcely more than a dozen in general cultivation. The forms of C. aureus, C. biflorus, C. nudiflorus, C. sativus, C. vernus, and C. versicolor are the most common. Of all these species there are numerous forms and garden varieties, which in size and colouring of their flowers are greatly in advance of the types, and constitute the bulk of the Crocuses used for planting in beds. The flowering period of the different species varies considerably, and by selecting these a succession of flowers may be had from October until May.

At the time of writing many of the slopes and mounds at Kew present a lovely sight with various species and varieties of Crocus and other bulbs, and these will be followed shortly by Narcissus, Hyacinths, Tulips, &c. This style of gardening has been a feature at Kew in spring for many years past.

For the decoration of the cool greenhouse or of the alpine-house many of the choicer sorts are adapted, especially if grown in shallow pans. No species of Crocus should, however, be subjected to any artificial heat during the growing season. This is a frequent cause of the malformation of the flowers when they are grown in pots and pans under glass; another effect is to cause the damping-off of the flowers before they reach maturity. A porous compost of good turfy loam, leaf-mould and sand, with abundance of drainage material, is the best for culture in pots, &c., and the earlier the bulbs are obtained in the autumn and potted-up, the better they will thrive, as many species emit roots shortly after the fall of the leaf.

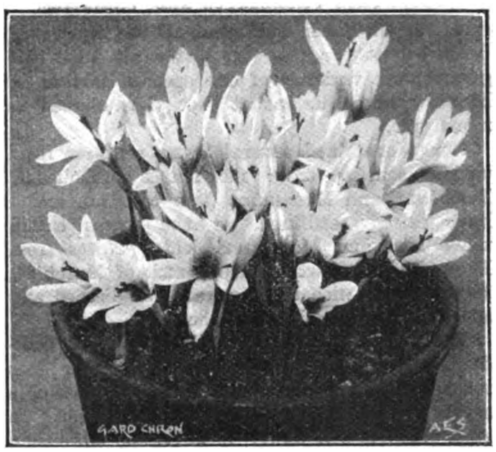


FIG. 66.—CROCUS MALYI.

The illustration of C. Malyi (fig. 66) shows what a lovely effect may be obtained from this species when treated in this manner. C. Malyi was discovered about sixty years ago by the late Herr Maly on Monte Vermay and Monte Orjen in Dalmatia, at an altitude of 7,000 feet, and was named in compliment to its discoverer by Professor Visiani, who described it in the supplement to the *Flora Dalmatica*. It is well figured in Maw's *Monograph of the Genus Crocus*, t. 18, also in the *Botanical Magazine*, t. 7590. The flowers rise to a height of 2 to 4 inches above the soil, and are almost pure white when grown under glass, but develop a slight tinge of purple on the outside of the tube when grown in the open. The tube is 2 to 3 inches in length from the ovary to the throat, and of a dull yellow colour. The throat, anthers, pistil, and style are of a deep orange colour, the large and prominent style being divided into a spreading mass of slightly divided stigmata. The sheathing-leaves are six to seven in number, scarious, and one-half to 2 inches in length. The proper leaves are four or five in number, appearing with the flowers, and barely reaching to the throat at the time of flowering, elongating after the flowers are over to a length of about 15 inches. C. Malyi flowers under cultivation during the month of March. *C. P. Raffill.*

COLEUS SHIRENSIS.

This is a species from British Central Africa now flowering in the Begonia-house. It is, I believe, the first time it has bloomed under cultivation. The seeds were sent to Kew by Mr. J. McCloumie at the same time as the recently-flowered and much admired Plectranthus crassus. The seeds germinated freely, the seedlings being very sturdy and freegrowing, and so far as the plant has been tested it appears to be even more robust in habit than the popular Coleus thyrsoideus, which was introduced from the same district. The plant now in flower is a specimen about 2½ feet in height and about the same measurement in diameter, nearly every one of the numerous branches having a fine inflorescence. The square stems are thickly dotted with dark-red spots, the opposite, decussate leaves having a stout petiole 2 to 2½ inches in length; the blade of the leaf is cordate in form, with a coarsely crenate margin, the largest leaves measuring 4½ inches in length by 3 inches in breadth. They possess a very strong and rather pleasant scent. The inflorescences are developed terminally, and have an average length of 6 inches, and are 2 inches in diameter. The large labiate flowers are of two shades of blue, the prominent lower lip being very dark-blue and the upper and smaller lip being of a lighter shade. Owing to the whorled nature of the inflorescence a continuous supply of fresh flowers is maintained, and there are often as many as thirty to forty fully expanded blossoms on each inflorescence. The plant under notice has been in flower for five weeks, and still has a profusion of fresh blooms. This new introduction cannot claim to excel the merits of C. thyrsoideus, but it is a really first-rate companion plant, with much to recommend it to the gardener. The cultivation necessary is similar to that afforded C. thyrsoideus.

MAXILLARIA OCHROLEUCA, *Lodd.*

A well-flowered plant of this pretty Brazilian species is now a feature of the Cattleya-house. The flowers are borne on slender scapes of from 4 to 6 inches in length; there are usually about six produced on either side of the pseudo-bulbs The petals and sepals are white. The lip is yellow, and rather small. Unlike many species of Maxillaria, this one is very sweetly scented.

ONCIDIUM DICHROMUM, *Rolfe.*

This very distinct and delightful Peruvian species is also flowering in the Cattleya-house, where it has made a bright display for the past three weeks. The growth is similar to that of a small Odontoglossum crispum, with narrow leaves varying in length from 6 inches to a foot. It produces its spikes very freely; they are rather slender, flexuose, and generally from 2 to 3 feet in length. The flowers are rather sparsely arranged on the inflorescence, each carrying from ten to twenty. The sepals and petals are about half an inch in length, and very curiously coloured, probably a reddish-brown would best describe it. The lip has a diameter of 1 inch, golden-yellow in colour. *W. H., Kew, February 27.*

GRAFTING THE PINK ON THE SAPONARIA.—M. POIRAULT advocates this practice as a means of securing it against the attacks of the Fusarium fungus. The scions of the Pink are grafted in spring or autumn on the root-stock of the Saponaria, the buds of which are removed.

NOTES FROM AN ISLEWORTH GARDEN.

THE past year was not noticeable for any great climatic vagaries, and was fairly satisfactory from a gardener's point of view. The fruit crop was generally good.

NEW PLANTS RAISED IN THIS GARDEN AND FLOWERING FOR THE FIRST TIME IN 1904.

Hippeastrum (hyb.) aulicum × vittatum.—One of these hybrids produced a colour sport of an amethystine-rose "self," which I have never previously seen in the genus.

Hippeastrum "Aulic Chief" [aulicum × "Indian Chief"].—A beautiful cross bi-coloured in green and red.

Hippeastrum hyb. Mandevilli [vittatum × equestre major].—A quaint and brilliantly-marked hybrid.

Hippeastrum hyb. aulictre [aulicum × equestre].—Not so beautiful as either parent.

Nerine hyb. Zoroasteri [pudica × corusca].—A fine hybrid, fairly intermediate between the parents, carrying a dozen flowers on a tall scape.

Nerine hort. "Gaimini." — This is an erect flowering form belonging to the sarniensis section, and is the largest-flowered Nerine I have. It bears about ten flowers to the umbel, of a bright pink colour keeled throughout with red, each flower 2 inches across.

Cineraria "Noel."—A light pink self and pleasing.

Canna (hort.) "Sorata."—Crozy type. Bright scarlet, erect and floriferous.

NOTES ON SOME PLANTS NEW TO THIS GARDEN.

Anemone græca bicolor.—This is a glorious plant for the Alpine-house, but is useless in the open near London.

Canna (hort.) "Prof. Troube."—Flaccida type. Flowers striped red and yellow, foliage purple.

C. (hort.) "Roma."—Flaccida type. A very fine form, with extra large yellow and orange flowers.

C. (hort.) "Austria" and "W. Beck."—Flaccida type. Flowers yellow and red.

C. (hort.) "Parthenope."—Flaccida type. Tawny-red flowers.

These four Cannas were kindly sent from the garden of Messrs. Dammann, of Naples.

Iris Milesi.—From the temperate zone of the Himalayas. Takes somewhat after chinensis in general aspect, but the flowers are purplish and whitish, and inodorous. It does well with me, either as a conservatory plant or in the open, and has lived through three winters quite unprotected. The fruit is generically typical, containing about fourteen brown, wrinkled, nearly spherical seeds with minute acute tip.

Clematis "La France" (hort.) is a plant of fine constitution, is a decided improvement on all the older blue forms, and is second to none in intensity of colour.

C. Henryi I regard as the best pure white. It seeds freely with me.

Lobelia tenuior I have grown for three years. It is a charming plant for the conservatory, and should be sown in September to produce the best effect the following summer.

VARIOUS PLANT NOTES.

The value of ornamental Vines for conservatory work is not generally recognised. For instance the old V. heterophylla variegata is undoubtedly one of the best foliage plants in cultivation. Vitis Coignetiæ, which rarely colours well outside in our damp autumns, is a glorious sight in pots, and even the common V. Veitchii (Ampelopsis) is quite worth growing for autumn decoration of the cool-house or veranda.

Two lovely little plants for decorative work in the dwelling-house are Pellionia Daveauana and Saxifraga sarmentosa tricolor, the former of which will stand a long time in a room, not minding the comparative absence of light.

Some of the best Roses among recent introductions are climbing "Caroline Testout" (pink), "Frau Karl Druschki" (white), and the Hybrid Teas, "Augustin Guinoisseau" (blush), and "G. Nabonnand" (cream).

Those who class Cypella cœrulea as synonymous with C. plumbea are in error. The former bears many (or several) flowers from the apex of the same flowering stem; the latter carries but a single flower. C. plumbea reproduces itself quite true from seed, with but slight colour-variations; the seedlings flower in four years after sowing.

Amaryllis Belladonna rarely flowers in the open ground (that is away from a wall) in the London district, but last September, of ten bulbs which have grown for several years under some Poplars, every one flowered. Probably owing to the Poplars drawing all the moisture from the soil, the bulbs ripened.

Crinums in the open.—Only C. Powelli and C. Moorei flowered well in 1904, but C. yemense flowered well under a wall.

AGAPANTHUS UMBELLATUS AND VARIETIES.

Mr. J. G. Baker held that all the Agapanthi (recorded at the time he last dealt with this genus) were varieties of one species, so that in his view the genus was at that time classed as monotypic.

I have examined several forms sent me from various sources under the names umbellatus, Leichtlini, and Mooreanus (two colours), and I have raised seedlings on the forms called umbellatus and Mooreanus [*vide* "Notes from Isleworth" in *Gardeners' Chronicle* of March 21, 1903, p. 181] without being able to discern any specific differences between them.

Mooreanus is more inclined to be deciduous than the rest, and probably for this reason may be left undisturbed at the base of a south wall or in other favoured positions. In such places it will flower in July, not more than a week later than plants which have been housed during the winter.

What I have as the type (umbellatus) is certainly a much finer plant than is generally seen under this name, but my plants are very generously treated, and have grown into "specimens." The same is also true of the variety Leichtlini, and this should be borne in mind in the descriptions annexed.

Umbellatus and Leichtlini are splendid decorative plants for the lawn. Mooreanus is no use for this purpose, but makes a good cut-flower for vases.

Comparative Description. — The leaf-stem is about 3 inches long in the type, longer in Leichtlini and shorter in Mooreanus. The number of leaves to each flowering stem is fourteen, sometimes more in Leichtlini. The maximum width of the fully grown leaf is 2½ inches, but is much less in Mooreanus, which in some cases has leaves only ½ inch wide. The length of the mature leaves is 3 to 3½ feet, a foot more in Leichtlini, and rather less in Mooreanus. The span of the umbel reaches a foot in Leichtlini, is an inch less in umbellatus, or only 7 inches in Mooreanus. The depth of the umbel is about an inch less than the span, but in Mooreanus the umbel is not more than 4 inches deep. The number of flowers in the largest umbels varies from 100 to nearly 150 in the case of umbellatus, and to nearly 200 in Leichtlini (see below). In colour my umbellatus is the most decided blue, and is slightly darker than Leichtlini. Mooreanus will flower from seed in eighteen months, and shows great colour variety, many shades of blue and even pure white coming from one blue parent without any crossing. The individual flowers of my umbellatus are indistinguishable from Leichtlini, but as a garden plant it is distinguishable by its greater compactness and sturdiness. In Mooreanus the whole plant is smaller and more slender. and the umbel is shallower, and carries notably fewer flowers. Leichtlini carries from 116 to 189 flowers in the umbel (average 146 flowers); umbellatus carries from 101 to 135 flowers to the umbel (average 118 flowers) in the case of really well-grown plants. I counted the flowers on six of the best scapes to find the average. Mooreanus has fewer flowers than this, perhaps only half as many. *A. Worsley, Isleworth.*

POTATO-COOKING TEST.

ON Tuesday, March 7, a further cooking test of Potatos was carried out at Marks Tey by Mr. William Deal, Mr. H. J. Jones, and Mr. W. Cuthbertson at Messrs. Dobbie & Co.'s seed farm.

It will be remembered that the judges on the last occasion expressed a desire that a later trial should take place to ascertain the effect of longer keeping on the various varieties and samples. Mr. George Gordon, V.M.H., Editor of the *Gardeners' Magazine*, and Mr. H. Henshaw, of Cambridge University Experimental Farm, again judged along with Mr. Alexander Dean.

Specimens for cooking were supplied by Messrs. Davie & Co., Haddington; Messrs. Bruce & Robbie, Forfar; Messrs. Dobbie & Co., Rothesay; Messrs. T. H. Lincoln & Co., Boston; Mr. R. W. Green, Wisbech; Mr. William Deal, Kelvedon; and Mr. H. J. Jones, Lewisham.

Following the system adopted last time, points were given as under:—

VARIETY AND LOCALITY.			Flavour	Texture	Appearance	Total.
1	Up-to-Date	Forfar	...	...	...	6
2	"	Lincoln ...	...	...	...	3
3	"	Bute	...	...	...	3
4	"	E. Lothian ...	3	4	3	10
5	"	Essex	...	...	...	7
6	The Factor	Forfar	...	...	...	4
7	"	Lincoln ...	...	...	...	5
8	"	Bute	4	4	3	11
9	"	E. Lothian ...	5	4	2	11
10	"	Essex	...	...	...	10
11	Warrior	E. Lothian ...	4	4	3	11
12	"	Kent	...	...	...	6
13	Langworthy	Bute	...	...	...	6
14	"	Forfar	...	...	...	8
15	"	E. Lothian ...	3	3	3	9
16	"	Cambridge ...	...	...	...	6
17	Evergood	E. Lothian ...	...	...	...	4
18	"	Bute	...	...	...	4
19	"	Forfar	...	...	...	4
20	"	Lincoln ...	...	...	...	4
21	"	Essex	2	2	1	5
22	Northern Star	Lincoln ...	...	...	...	4
23	"	E Lothian ...	3	4	3	10
24	"	Bute	...	...	...	3
25	"	Forfar	...	...	...	3
26	"	Essex	...	...	...	5
27	The Crofter	Lincoln ..	...	...	...	6
28	"	Essex	5	3	2	10
29	"	Bute	...	...	...	8
30	King Edward VII. ...	Bute	...	...	...	5
31	" ...	Essex	...	...	...	5
32	" ...	Lincoln ...	2	2	2	6
33	Chas. Fidler	Essex	...	...	...	4
34	"	Lincoln ..	3	3	2	8
35	"	Bute	...	...	...	6
36	Duchess of Cornwall...	Bute	...	...	...	4
37	" ...	Essex	...	...	...	6
38	" ...	Lincoln ...	3	3	2	8
39	Sim Gray	Bute	...	...	...	4
40	"	Essex	3	2	2	7
41	Discovery	Bute	...	...	...	6
42	"	Essex	3	4	3	10
43	"	Kent	...	...	...	5
44	Green's Favourite ...	Cambs. ...	3	3	3	9
45	Peacemaker	M. Lothian ...	3	3	3	9
46	Windsor Castle ...	Lincoln ...	3	3	3	9
47	Scotch Triumph ...	E. Lothian ...	3	3	3	9
48	Her Majesty	Forfar	3	3	3	9
49	Garden King	Kent	3	3	3	9
50	Cambridge Russet ...	Kent	3	4	3	10
51	Uncle Sam	Kent	3	3	3	9
52	Kerr's King Edward ..	Kent	2	3	2	7

The best dish of each variety was left standing for twenty-four hours after being judged, for the purpose of being then examined and its appearance reported on. Mr. Cuthbertson and Mr. Ireland examined them all carefully, and found Warrior, The Factor, Langworthy, Green's Favourite, Peacemaker, were unchanged, retaining their whiteness and flakiness. The others had all gone off a little.

BAMBOO FOR THE GARDEN.

MANY gardeners have used Bamboo canes for staking flowering plants and small trees, but it may not have occurred to all to realise to how many other useful and artistic purposes Bamboo can be applied in the garden. Nature has provided no material that can approach to the Bamboo in its many-sided usefulness to the gardener. Strength combined with lightness, cleanliness, durability, elegance of appearance, and economy of cost are all in its favour.

Dealing first with the Bamboo in its natural state, or at least as regards the kinds which are imported into this country, the Tonquin cane is the most familiar to gardeners. It grows with a smooth, straight stem of a faint yellow colour, is almost of equal diameter the whole length, and nearly solid, weighing much heavier than the ordinary hollow Bamboo. The usual imported lengths are 4 feet, 5 feet, 6 feet, and 7 feet, varying in thickness from ½ inch up to ¾ inch; and for staking Chrysanthemums, Roses, Dahlias, Tomatos, and Carnations there is nothing better. Being so smooth, they do not harbour pests, such as greenfly, &c. The uses of Bamboo, however, in the garden extend far beyond stakes. What are known as yellow Bamboo tapers can be put to many uses. These have a natural glossy surface, with knots at frequent intervals, which project more than in the Tonquin variety. They can be purchased in various lengths, from about 7 feet up to 20 and 24 feet long, the butt-end varying in thickness according to the length, say from ½ to 1¼ inch. The tops taper off into strong twigs, which can be bent without the aid of heat, and are excellent for tying Carnations. Clusters for training of any height, either in pots or in the ground, are easily made by thrusting three or more taper-twigs into the earth, bending the top and tying them together with galvanised binding wire.

Arcades or rosaries can be artistically formed, an example of which is illustrated in fig. 68, using Bamboo tapers 14 feet long, and sticking them about a foot into the ground and the same distance apart in a line on each side of the path or walk, and fastening to them similar poles horizontally, with the twig-tops cut off. Such arcades can be of unlimited length, it only means extending the length of the horizontal canes by letting them overlap, and binding them together with galvanised wire. For annual climbing plants the structure can easily be taken down and packed away during the winter months, but where a permanent arcade is wanted it is advisable to tar the bottoms of the canes, a process which will materially prolong their life.

Conservatories, greenhouses, and ferneries afford many opportunities for the use of Bamboo. The taper-canes give a good effect when used for the training of light-growing plants. As Bamboo can be obtained up to 6 inches in diameter, flower and Orchid pots made of short lengths are very effective, either hung or stood about where desired. The hollow Bamboo just referred to, and with which everyone is more or less familiar, lends itself peculiarly to all kinds of flower decoration. At each joint is a strong membrane, which divides the cane into a number of water-tight cylinders, and these joints are practically rot-proof.

By cutting a series of holes in a length of Bamboo, one between each knot, a very pretty holder for dried grasses or cut flowers is formed. Fig. 67 shows the kind of flower-holder here described, the holes being cut out with a thin-bladed saw, and by making a nail-hole at the back it can be hung up. By using the stouter Bamboos in this way, and planting miniature Ferns in each hole, a very pretty effect is obtained. For Fern or window-boxes, Bamboo can be artistically used in conjunction with virgin-cork. The canes can easily be split in halves lengthways, and will split true, so that shelving can be made more decorative by edging the front with the Bamboo, fixing it on with wire panel pins, taking care to always drill the holes first with an ordinary bradawl.

Arches, porches, porticos, verandahs, arbours, and summer-houses can, with a little practical knowledge, be easily constructed by any gardener, using Bamboo for the principal parts.

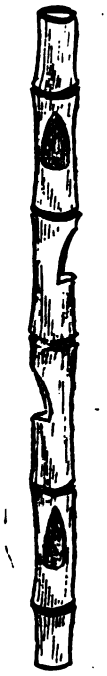


FIG. 67.—FLOWER-HOLDER OF BAMBOO.

The tools required are but few and the material inexpensive and very durable, the chief thing being to learn how to make a strong and neat joint. By dint of a little practice this can soon be accomplished, after which the scope of ingenuity in the way of ideas is practically unlimited.

The tools chiefly required are: Rasp, fine-toothed saw, brace and centre-bit, light hammer, bradawl, and knife (a pen-knife will do). The rasps are distinct from the ordinary wood rasp, being deeper in segment—in fact, quite a semicircle in section. These are sold in various widths from ½-inch to 1¼-inch by most tool dealers. A 1-inch rasp is about the best size to have for general purposes. The saw should be of the kind known as a "tenon," or meat saw—a 10-inch need not cost more than 1*s.* 9*d.* *S. W. N.*

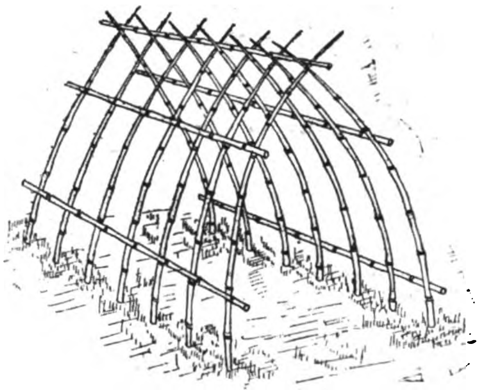


FIG. 68.—ARCADE MADE OF BAMBOO.

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT FIR GRANGE, WEYBRIDGE.

ORCHIDS are the principal plants under glass in the gardens of W. A. Bilney, Esq. (gr., Mr. Whitlock), and the showy Dendrobiums, both species and hybrids, are the favourites among the Orchids.

The Dendrobium-house presented recently literally a mass of bloom, a large proportion of it being borne on grand specimens of Dendrobium Wardianum, which have stout pseudo-bulbs, many of them 3 to 4 feet in length. This is one of the handsomest of Dendrobiums, but in gardens generally it has a reputation for rapidly declining in vigour. This is not Mr. Bilney's experience, for he still has most of the first plants he purchased, and notably the pretty carmine-tinted D. Wardianum "Fir Grange" variety, for which an Award of Merit was obtained in 1900. Many handsome varieties were in bloom when these notes were taken, and also a plant of the best white form of D. Wardianum with several growths.

The varieties of Dendrobium nobile are also well represented, including the best white forms, and still the best-coloured variety, D. nobile nobilius, in good specimens. Out of a recent importation, however, Mr. Bilney is flowering two of the giganteum type different in shape to nobilius, and very finely coloured. A very interesting specimen of the old D. nobile is also in the collection, whose history has been traced for over fifty years. Of other species there were in flower some good specimens of Dendrobium Findlayanum and D. Brymerianum, and remarkable for extraordinary vigour several plants of D. albo-sanguineum, some of the pseudo-bulbs being considerably more than 1 foot in length, and very strong.

Of the hybrids in bloom were a very fine set of the best forms of D. × Ainsworthii, including the white D. × A. intertextum and D. × A. Hazleborne variety, for which Mr. Bilney received an Award of Merit in 1902; a number of distinct forms of D. × melanodiscus, of which the variety Rainbow is the showiest; good forms of D. × Euryalus Apollo, D. × splendidissimum, and D. × rubens grandiflorum. One of the new forms of this type now flowering has very finely formed flowers, white tipped with carmine-rose and with a fine claret disc to the lip; D. × The Pearl, a very delicately tinted flower; forms of D. × chlorostele, Clio, Aspasia, and Lutwychianum, all hybrids of D. Wardianum; D. × Schneiderianum, D. × Artemis, D. × Hebe, D. × euosmum leucopterum, and several pretty hybrids of the same strain with white flowers with purple disc to the lip, the best of which resulted from D. tortile × Ainsworthii; the fine magenta-rose D. × Harold, the handsome D. × Thwaitesiæ, one of the finest of yellow-petalled Dendrobes, and a great number of other pretty varieties. Of very rare varieties noted was a fine example of D. Falconeri giganteum with large and finely-coloured flowers, which seem to grow here most luxuriantly.

In the other houses was a varied selection of good Orchids, with Cypripedium Rothschildianum and some other Cypripediums in bloom; also a number of the best forms of Cœlogyne cristata, half-a-dozen good examples of Cymbidium eburneum, several of the orange-scarlet Lælia harpophylla, a bright group of Lælia anceps, some good Lycaste Skinneri, Lælia × Mrs. Gratrix, and several other showy kinds, including a very finely-coloured form of Cattleya Trianæ.

The cool-houses, a small range in two divisions, have been more recently completed than the other Orchid-houses, and the specimens of Odontoglossum crispum, obtained out of recent importations, are mostly unflowered, but are fast approaching the flowering stage. A few plants of O. crispum, O. triumphans, O. Rossii, O. pulchellum, &c.,

were in flower, but the main show of bloom in the cool-houses was a number of good specimens of the old form of Cypripedium insigne sylhetense, which is still a very distinct and free-blooming kind, and one of the easiest to grow of green-house plants. Moreover, it lasts a very long time in flower. *J. O'B.*

GENYORCHIS PUMILA.

This is the name given by Schlechter to an Orchid which at one time or another has been included under Dendrobium, Bulbophyllum, and Polystachya. It is a pretty little species which encircles the branches of the trees in the Congo district, and which has flowered in the Brussels Botanic Garden and in the Colonial Garden at Laeken, where also another Congolese Orchid, Polystacha polychæte, has produced its flowers. Neither plant is sufficiently showy to attract the notice of Orchid growers in general. They are figured in the last number of the *Revue de l'Horticulture Belge.*

DENDROBIUM FIMBRIATUM OCULATUM.

A healthy specimen of this beautiful species is now flowering in the large conservatory at Cherkeley Court, Leatherhead, the residence of Abraham Dixon, Esq. The plant, standing on a tall pedestal with twenty-seven splendid spikes of rich orange-yellow flowers, is exceedingly attractive. Altogether there are about 300 flowers on the plant, the majority of them measuring 2¾ inches in breadth; the large maroon-red spot on the lip is very beautiful, so that it is one of the finest varieties I have yet seen of this lovely Dendrobe. Mr. A. Wilson, the gardener at Cherkeley Court, told me that the plant has been grown in a vinery, standing on the ground a long way from the roof-glass, and in almost full sunshine. During the growing period the plant was kept thoroughly moist at the roots, and was well syringed overhead several times a day. All through the winter months it has been rested with the Vines, the temperature ranging from 40° to 50° by night. In the same house is a healthy batch of Cattleya Trianæ, and all the plants have been in the collection for a great number of years; there are several very pretty and distinct varieties, the most prominent among them being a fine plant of the rare C. T. Backhouseana. For several years past the deciduous Calanthes have grown well under Mr. Wilson's care. These plants are now commencing to push up strong, clean, healthy growths, and will be repotted during the next few days. The plants are grown singly in well-drained pots of moderate size, having good fibrous loam and a little coarse silver sand to root into. *W. H. W., March* 6.

DISA GRANDIFLORA, YELLOW VARIETY.

Of late years the discovery of a fine yellow variety of Disa uniflora, more generally known in gardens as D. grandiflora, has been reported from South Africa, and a correspondent under date February 6 says:—"Last week I saw two spikes of Disa grandiflora with flowers of a beautiful yellow colour, quite pure, and rather larger than the ordinary scarlet form."

Another correspondent sends us a cutting of a Cape paper referring to the event.

Bolus, in *Orchids of the Cape Peninsula,* says:—"There is a variety found near Du Toit's Kloof which has the sepals and galea tinged with orange," and it may be a form of that type which is now recorded.

In the Right Hon. Lord Rothchild's gardens a few, supposed to include yellow varieties, were received three years ago, but only good scarlet varieties flowered, and no yellow form has yet appeared in cultivation.

STAUROPSIS GIGANTEA.

We have on several occasions recorded interesting Orchids grown in an ordinary plant-house by D. Campbell Brown, Esq., Bank of Scotland House, Oban, N.B. Mr. Brown makes no pretensions to being an Orchid-grower, and yet has great success with some reputedly "difficult" plants. The species is generally called Vanda gigantea, and the plant now in flower is stated to have nineteen leaves, each 16 to 17 inches in length, and an inflorescence of seven flowers. The flower sent is 2½ inches across, and the segments, which are very fleshy, are of a clear sulphur-yellow tint irregularly spotted with reddish-rose, the side lobes of the labellum being tinted with rose. It is a very singular and attractive species.

VEGETABLES.

THE BEST PEAS.

HAVING to lecture on edible Peas before the members of our Gardeners' Society, I invited six first-class gardeners, most of whom are also famous exhibitors of vegetables, to furnish me with their special selections of six varieties of Peas, medium to tall in height, suited to furnish a succession for a long season. One gardener, Mr. A. Ward, formerly of Stoke Edith, and now of Ashford, Kent, whilst an eminent gardener is not an exhibitor, and I purposely invited his list, because doubtless his point of view would be that of a domestic supply of Peas rather than for exhibition. Still, no doubt each of the other gardeners, Messrs. J. Gibson, E. Beckett, W. Pope, W. Fyfe, and J. Bowerman, has given full consideration to that object in their selections. Prior to receiving any of the lists, I prepared a list from my own experience of many varieties, and that I will give with the rest.

Mr. A. Ward's selection is:—
Early Giant
Centenary
Eureka
Duchess of York
Criterion
Autocrat

Mr. E. Beckett's is:—
Early Giant
Duke of Albany
The Gladstone
Edwin Beckett
Alderman
Autocrat

Mr. J. Gibson's is:—
Early Giant
Duke of Albany
The Gladstone
Senator
Prize-winner
Autocrat

Mr. W. Pope's is:—
Early Giant
Acme
The Gladstone
Edwin Beckett
Centenary
Autocrat

Mr. W. Fyfe's is:—
Early Giant
Exonian
Alderman
Peerless
Criterion
Autocrat

Mr. J. Bowerman's is:—
Early Giant
Prestige
The Gladstone
Edwin Beckett
Criterion
Autocrat

My own selection is:—
Early Giant
Prize-winner
The Gladstone
Senator
Centenary
Autocrat

The following show the number of votes given to each of the selected sixteen varieties from seven voters:—Autocrat, 7; Early Giant, 7; The Gladstone, 5; Edwin Beckett, 3; Centenary, 3; Criterion, 3; Alderman, 2; Duke of Albany, 2; Prize-winner, 2; Senator, 2; Acme, 1; Exonian, 1; Eureka, 1; Prestige, 1; Peerless, 1.

I have purposely refrained from giving the names of any firms associated with the varieties, because I do not know in all cases who put them into commerce. Prestige is the only one that is unknown to me. It is significant that there seems to be no Pea more popular as a first early than is Early Giant, and none more so for a late one than is Autocrat. The Gladstone also comes out well, but it may not yet have become so widely known as it deserves. What is most obvious, however, is that we have many varieties of Peas of medium height possessing superb "marrow" flavour and wonderful cropping qualities, of which those named in the list can hardly be excelled. I did think, however, that someone would have named Thomas Laxton, certainly a fine cropper. *Alex. Dean, Kingston-on-Thames.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

The Potting of Dendrobiums presents more difficulties than occur in the potting of most other Orchids, owing to the tenacious character of their roots; therefore, so long as the plants have sufficient room and the drainage is perfect, renovation of the surface materials will keep the plants healthy and vigorous for years. Plants of D. nobile, D. crassinode, D. Findlayanum, and D. aureum, with the many hybrids therefrom, should be overhauled soon after new growths appear, so that fresh material may be supplied in time for the new roots to benefit therefrom. If the plants are grown on a stage, they should be put into pots, and these should be about half filled with drainage material. Work in amongst the roots a mixture of fibrous peat, short lengths of bracken rhizomes, and sphagnum-moss in equal parts, finishing off the surface neatly with peat and sphagnum-moss. Do not press the material very tightly, but make a few of the pseudo-bulbs secure by tying them to neat stakes. If the plants are to be suspended, use good-sized shallow baskets or perforated pans, and employ but little drainage material other than that afforded by the "Fern-roots." This class of Dendrobium needs a moist atmosphere, a moderately high temperature when growing, and moderate protection from bright sunshine, especially in the early stages of growth; afterwards a little more sunlight will not be harmful. When the plants are nearly completing their growth for the season, only a sparing supply of water will be needed, but the atmosphere may be kept moist by judicious damping and spraying. Those allied to D. nobile may be propagated by taking lengths of suitable old bulbs, almost cutting them through between every other node, and then laying them on damp sphagnum moss or other moisture-holding material in a propagating case. When the resultant growths emit roots fix each piece in a small pot and cultivate it in a warm atmosphere.

Dendrobium Wardianum.—Few growers succeed in keeping this grand species in a thriving state many seasons after it is imported, the balance of light and heat being so unstable at the season when the newly-made pseudo-bulbs have to grow and mature. The new growths having made considerable progress root action will soon follow, and before this occurs the necessary cultural details should be given attention. Do not disturb the plants unless there is absolute need to do so, but pick out as much of the old material as possible and replace it with new. In cases where potting is decided upon crack the pot and insert those parts to which live roots cling into the new receptacle. Employ small pans for suspending the plants, afford ample drainage, and a compost of good fibrous peat and sphagnum moss. This species enjoys a high temperature with free ventilation, and when there is young growth on the plants protection from strong sun-light is essential. A light and warm position in a Cattleya-house is a very suitable one for the plants, provided the summer season is at all a good one, because failure generally overtakes plants subjected to a high artificial temperature or a stuffy atmosphere. Speaking generally, Dendrobiums of every class resent frequent waterings, excepting for a short period when in most active growth and root production, and even then the materials should be such that the water will get away easily. In no case do I advise the use of decaying leaves as an addition to the rooting medium for Dendrobiums.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Plants which have been developing their fruit during the winter months will require to have a dryer atmosphere as the fruits approach ripeness, and water should be withheld from them. The fruits on the earliest Queens will commence to swell freely as soon as the flowers have passed, and applications of weak natural manure-water and of guano-water may be given more frequently in the place of clear water. Remove the surplus suckers from each plant whilst they are small, retaining only one or two of the strongest. All gills that appear around the base of the fruits must be taken away. The weather in March and April being generally very changeable, extreme care is necessary in ventilating the structure, but a little air should be admitted in bright weather when the atmospheric temperature has reached 78°, and is steadily rising. When the weather is mild the temperature at night may be 75°, falling to 70° in the morning. Let the bottom-heat be maintained steadily at 90°. Start the fires early in the afternoon, and by this means and by retaining the sun-heat it will be possible to maintain the required temperature without having to heat the pipes excessively. Until the end of next month cover the pits at night with mats or other protective material. Do not syringe the plants overhead yet, but moisten the surface of the beds and all available spaces at closing time, and damp the paths more frequently, occasionally using liquid-manure for the purpose. Examine that part of the hot-bed near to the hot-water-pipes, and if the material is dry apply water at a temperature of 85°. Secure each of the fruits to two neat stakes, as they require support to keep the crowns straight. Place each stake at about 2 inches from the sides of the pot, they will not then injure the tender roots.

Succession plants which were potted last month into pots in which they will fruit will require to be watered very carefully until they have made plenty of roots and are growing freely. The plants have been kept in a rather close and moderately moist atmosphere, but as they become better established ventilation may be applied more freely. The temperature at night may be 65°, allowing a rise during the day. Repot any plants which were not attended to last month. Pot up suckers as soon as they are obtainable, and plunge them in a bottom-heat of 80° until they have made roots, after which they will require similar treatment to that advised for succession plants.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Begonia Gloire de Sceaux.—In order to obtain large specimens of this plant propagation should be commenced as early as possible. Select base or sucker growths for cuttings, and insert them singly in thumb-pots, plunging these in a brisk bottom-heat. They will soon make roots, and should then be given a shift into slightly larger pots before the smaller ones have become so filled with roots as to cause a check to the plants. Let the soil consist of good fibrous loam two parts, leaf-soil and broken lime-rubble one part of each, adding sufficient broken charcoal and silver-sand to keep the compost porous. Do not pot the plants deeply, or they will probably collapse suddenly and for no apparent reason. It is to deep potting and to neglect in adding sufficient lime-rubble to the soil that I attribute such failures. Well-grown plants are of great service from December until April, for apart from the beauty of the flowers the rich bronze-coloured foliage is very effective. Guard the plants at all times against suffering a check, and cultivate them in a warm, moist atmosphere, in a light position, shaded from direct sunshine. Even from the potting stage and until they flower, the plants should be treated with "Quassia Extract" in the manner advised recently for Jacobinia chrysostephana.

Begonia Haageana, when grown in pots in a warm atmosphere, remains in serviceable condition for a long time during summer, but planted against a partially shaded wall in a moist atmosphere the plant grows more luxuriantly, and flowers almost incessantly, the effect of the blooms among Ferns and other greenery being charming. Cuttings may now be inserted, and another batch a little later to form a succession. Good fibrous loam and turfy peat, with a liberal supply of silver sand added, will form a suitable compost.

Begonia corallina is a useful plant for decorative purposes, but should be planted out in a border under glass where there is plenty of heat and moisture, and where it can be allowed to grow up the roof, in order for its fullest effect to be realised. When a plant has become established it makes vigorous growth, and is rarely without flowers. For making cuttings select growths of moderate vigour only, and propagate them similarly to B. Gloire de Sceaux.

Begonia President Carnet may be treated in the same way as B. corallina. The "trusses" of flowers being large and handsome, they are very effective, especially if grown overhead.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

The Loganberry.—This is a hybrid between the Raspberry and one of the American Blackberries. Growers should be particular to obtain plants propagated from reliable stocks, as seedlings do not reproduce themselves true to character. A quantity of these plants purchased from the continent turned out to be quite worthless, all being seedlings. The plant can be grown in various forms, and is adaptable for covering arches, pergolas, and trellis-work; also for forming wind-brakes in the fruit-garden, and for divisions between various parts of the vegetable-garden. Canes that were planted this season may be cut down to within 1 foot of the ground level. The ground previous to planting should be thoroughly prepared and receive a liberal addition of manure. Established canes should have all the old growths removed directly fruiting is over, but if this has not been done proceed with the work immediately, retaining four to six of the straightest and strongest young growths. If these are well ripened they may be allowed to remain their full length. Those plants that are tied or nailed to walls should have their canes trained about 12 to 18 inches apart, and stopped at the height of the wall. North and north-east walls are admirably adapted for the plant's requirements, and the fruit from this situation will be produced later than from those planted in more sunny positions, and thus the season for this fruit will be prolonged. The Mahdi, a new hybrid of similar parentage as the foregoing, requires the same treatment. The Japanese Wine-berry (Rubus phœnicolasius) has little merit for culinary purposes. The foliage and wood are of a very ornamental character, and the plant is adapted for covering bare places, and is effective when allowed to grow wild and as isolated specimens.

Black Currants.—Now that the buds are swelling keep a sharp look-out for the "big bud" disease [mites], and if the diseased buds are not too numerous, hand-picking should be resorted to. This practice, where Black Currants are extensively grown, would necessarily be expensive; in such cases much good will result by spraying the trees with a mixture of sulphur, soft-soap, and paraffin in the proportion of 2 oz. of the first two to 1 gallon of water, adding a wineglassful of paraffin to the whole. Keep the mixture well stirred while it is being applied.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peas.—Good breadths of Peas may now be sown, and there will be no danger of their rotting in the ground. Such varieties as Mayflower, Little Marvel, Daffodil, Chelsea Gem, Exonia, Criterion, and Carter's Buttercup, sown here in January, are now well above ground, but in the event of cold cutting winds it will be necessary to draw the soil towards them in ridge form to serve as a protection. Dust with soot to prevent damage from slugs and sparrows. Peas that have been raised under glass, and have been hardened-off well, may be planted-out in sheltered positions where the sun's rays will reach them. Then put some branches of Yew about 18 inches high at distances of 3 feet apart, over which stretch nets to afford shelter and protection from birds. It is a good as well as a general practice to sow Spinach between the rows of Peas.

Cauliflowers raised from seeds sown in the autumn should now be planted out in a sunny, sheltered position. If afforded such protection as is advised above for Peas, it is an advantage to get the plants put out early and before they are of large size into rich soil, as there is then less danger of their becoming blind. Plants for affording the first crop we are now putting into 8-inch pots. Seeds of Cauliflower should now be sown in the open, and these will afford a succession to the autumn-sown plants. Such varieties as Early London, Eclipse, Autumn Giant, and Self-Protecting, will form a good succession.

French Beans.—To maintain a supply of this favourite vegetable, any portable frames upon hot-beds that have been used for such crops as Asparagus should be cleared and sown with French Beans. These will provide a supply much in advance of that obtainable from seeds sown out-of-doors.

Potatos which have sprouted under glass may be planted in such frames as advised above for French Beans, and a few may be planted out-of-doors in a sheltered border near to a south wall, where protection can be easily provided in the event of spring frosts, but the soil should have been previously prepared, and should consist of a good proportion of partly-decayed leaf-soil, old potting-soil, road-scrapings, and wood-ashes, well mixed together. By these means a fortnight may be gained in the time of lifting new tubers.

Tomatos.—Sow seeds in gentle heat for raising plants to be cultivated out-of-doors. Place the seeds 1 inch apart in shallow boxes, for if the seeds be sown at all thickly in boxes or pots the danger of allowing them to become drawn is greater. The plants should be kept near to the glass until removed out-of-doors. They need perfect drainage and moderately rich soil, free from stable-manure, but containing wood-ashes.

Seeds of Brussels-Sprouts, Cabbage, Leeks, Lettuce, Parsley, and other herbs, may be sown on well-prepared ground. Sow seeds of Radishes at intervals of a few days.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Seed Sowing.—Seeds of several varieties of "annuals" should now be sown, including China Asters (especially the single varieties), Pansies, Phlox Drummondi, Cannabis gigantea, Cosmos, Coreopsis, Oxalis corniculata, Scabious, and Salpiglossis. Prepare a suitable hot-bed in a frame, covering the surface with a layer of fine, light soil about 12 inches in depth. Sow the seeds in drills about 1 inch deep. Seeds of Acacia lophantha, Daturas, and Erythrina crista-galli should also be sown. Propagate plants of Paris Daisies, and of Campanula isophylla and the variety alba. These Campanulas are especially suitable for growing in vases, &c., or for planting in warm nooks on the rockery.

Lilies require a deep, rich, well-drained soil and a situation that is sheltered from strong winds and from excessive sun-heat. L. auratum and L. speciosum succeed well when planted on slopes facing to the south-east. The present is a favourable time for top-dressing the bulbs with well-rotted manure. The varieties L. s. Crown Princess, L. s. rubrum multiflorum, and L. Schrymakersii, produce their flowering-spikes early and freely. L. candidum, L. croceum, L. chalcedonicum, and L. testaceum thrive well in ordinary borders. The species first-named should be seldom disturbed, or the plants will fail to produce the best results.

Trees and Shrubs.—Proceed with planting shrubs on all favourable occasions. Tall trees recently transplanted must be made secure from injury by wind. An excellent manner of securing freshly-planted trees is to drive three pegs into the ground at equal distances from each other, and 9 feet from the tree. Tie some soft material two-thirds up the stem of the tree, round which fasten stout wire, and secure to the pegs in the ground. Cotoneasters are excellent subjects for planting on rockeries, on walls, and on steep banks in shady places, and all the species are easily grown. Some of the choicer varieties are C. bacillaris, C. horizontalis (with prostrate frond-like growth), and C. congesta (a charming evergreen species, suitable for rockeries). Among deciduous trees and shrubs having conspicuous golden foliage are: Acer palmatum aureum, Catalpa bignonioides aurea (useful in subtropical bedding), Populus canadensis aurea, Quercus pedunculata concordia, Spiræa opulifolia aurea, Ulmus campestris Dampieri aurea, U. c. Roseelsii aurea.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* EDITOR, 41, Wellington Street, Covent Garden, London. *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, MAR. 22 { Royal Botanical Society's Show at Regent's Park.

FRIDAY, MAR. 24—Royal Botanical Society's Meet.

SALES FOR THE WEEK.

MONDAY NEXT—
Choice Border Plants and Perennials, Roses, Azaleas, Lilies, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.
WEDNESDAY, NEXT—
Palms, Plants, Azaleas, Rhododendrons, Fruit Trees, Roses, Herbaceous Plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.
FRIDAY NEXT—
Gladiolus, Spiræas, Roses, Herbaceous Plants, Begonias, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Orchids in large variety at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —43·4°.
ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, March* 15 (6 P.M.): Max. 50°; Min. 42°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 16 (10 A.M.): Bar., 29·3; Temp., 51°.
Weather—overcast, with occasional sunshine.
PROVINCES.—*Wednesday, March* 15 (6 P.M.): Max. 48°, Scarborough; Min. 40°, S E. Coast of England.

Some Events of the Week. AT a meeting of the Committee of the National Rose Society held on Tuesday last, a discussion arose as to the form which the memorial to the late Dean HOLE should take. Rev. J. H. PEMBERTON, in addressing the meeting, emphasised the necessity of dealing with the matter on broad lines. It would not be enough to found a class in an exhibition schedule, but some means should be taken to excite the sympathies of others besides exhibitors and the members of the National Rose Society. There were hundreds of people unconnected with the Society and with Rose exhibitions who knew Dean HOLE through his books, cherished his memory, and who would, if properly approached, be desirous of testifying to their appreciation of the late Dean's work. A large number of our American cousins regarded him as a public benefactor, and would probably contribute to a permanent memorial if some definite scheme were placed before them.

Dr. MASTERS, complying with the request of the Chairman, afforded some explanations as to the manner in which the Veitch Memorial Trustees used the funds entrusted to them for the promotion of horticulture, and for the recognition of valuable services to it, in any way, without any limitation as to nationality. Lately the Trustees had contributed a most welcome addition to the funds of the Lindley Library. He suggested that the Hole Memorial should be instituted on similar lines. Ultimately a small Committee was appointed to consider the matter further, and it was decided to meet at 2 o'clock on April 11.

The most interesting feature of the meeting of the Scientific Committee, held on the same day, was the presentation to Professor HENSLOW of a handsome tea and coffee service on the occasion of his retirement from the Honorary Secretaryship of the Committee, after a service of more than twenty-five years. Dr. MASTERS, in making the presentation, alluded to the history of the proceeding, and explained that the presentation was made exclusively by the members of the Committee and by some of the members of the Council. Had those who were concerned in the organisation of this memorial sought outside co-operation it is certain the response would have been much larger, but it was felt to be desirable to confine the subscriptions to members of the Committee.

Professor HENSLOW, in acknowledging the gift, alluded to the history and present condition of the Committee, and to the great pleasure he had derived from its meetings. It is satisfactory to know that although owing to change of residence Mr. HENSLOW will not be able to attend the meetings so regularly as heretofore, he will still be enabled occasionally to give his valuable services to the Committee and to the Society generally.

This agreeable function disposed of, Mr. WILKS made two announcements which gave great gratification to the members. The first was that some gentleman whose name was not mentioned had promised to present the Committee with a microscope, and requested some suggestions as to the kind of instrument required, which were thankfully given.

The second intimation was that Mr. MASSEE had undertaken to initiate some experiments at Wisley on the bud-mite of the Black Currant, and also to carry on some investigations on the germination of seeds under certain conditions. To make the beginning of experimental research at Wisley is in itself a hopeful sign and a promise of better things to come.

As we are going to press we receive information that Mr. R. NEWSTEAD, whose work on the Coccidæ has elicited the warm approval of the experts, and who has acted as our Entomological Referee for some years, has been requested to undertake the duties of a special lectureship in economic entomology and parasitology in the School of Tropical Medicine attached to the University of Liverpool.

BOUGAINVILLEA SPECTABILIS IN AMERICA (see Supplementary Illustration).—The following note is from Mr. SIDNEY HOCKRIDGE, manager of the City Nurseries, Redlands, California: "Noticing that illustrations of several Bougainvilleas have appeared in the *Gardeners' Chronicle* recently, I am sending you a picture of a dwelling here (that of Mr. HENRY FISHER), which has attracted the attention of world-wide travellers, because of the remarkable profusion of the Bougainvilleas upon it. The species is B. spectabilis, and four plants were planted in June, 1897. They were hardwood cuttings 9 inches high and barely rooted. The total length of wall surface now covered by these four specimens is 100 feet, and they have attained to a height of 28 feet. Some of the growths doubtless are over 30 feet in length. These Bougainvilleas are never pruned, but have been frequently cut back by frost. On February 14, 1902, they endured a temperature of 25°. On that occasion they were found to be in bad condition however, all soft growth and all firm, ripe wood less than ½ an inch in diameter being killed. In October, when the photograph was taken, the display of colour was wonderful, and to-day, Dec. 27, the colour is very fine, but has faded to some extent and the flowers are dropping fast. On the right side of the picture may be seen a plant of Bignonia venusta. This has established itself and seems likely to contest the supremacy of the Bougainvillea. The Bignonia never fails to give a glorious display from December onwards, and just now is at its very best, furnishing a magnificent display of orange colour. The aspect is to the south."

THE ROYAL SOCIETY.—Among the fifteen selected candidates for election this year are Professor F. W. OLIVER and Lt.-Col. D. PRAIN, the Superintendent of the Botanic Garden, Calcutta.

THE BOARD OF AGRICULTURE AND FISHERIES.—We are informed that Mr. AILWYN E. FELLOWES, M.P., the new President, has appointed Mr. F. L. C. FLOUD to be his Private Secretary. Mr. REGINALD LUCAS, M.P., will act as Mr. FELLOWES' Parliamentary Private Secretary (unpaid).

TESTIMONIAL TO MR. H. ECKFORD.—All who have sympathy with the proposal to present a testimonial to Mr. HENRY ECKFORD, in recognition of his services to floriculture, are asked to communicate with Mr. H. J. WRIGHT, 32, Dault Road, Wandsworth. Our readers are well aware that the evolution we have witnessed in the Sweet Pea has been mainly due to the work done by Mr. ECKFORD at Wem.

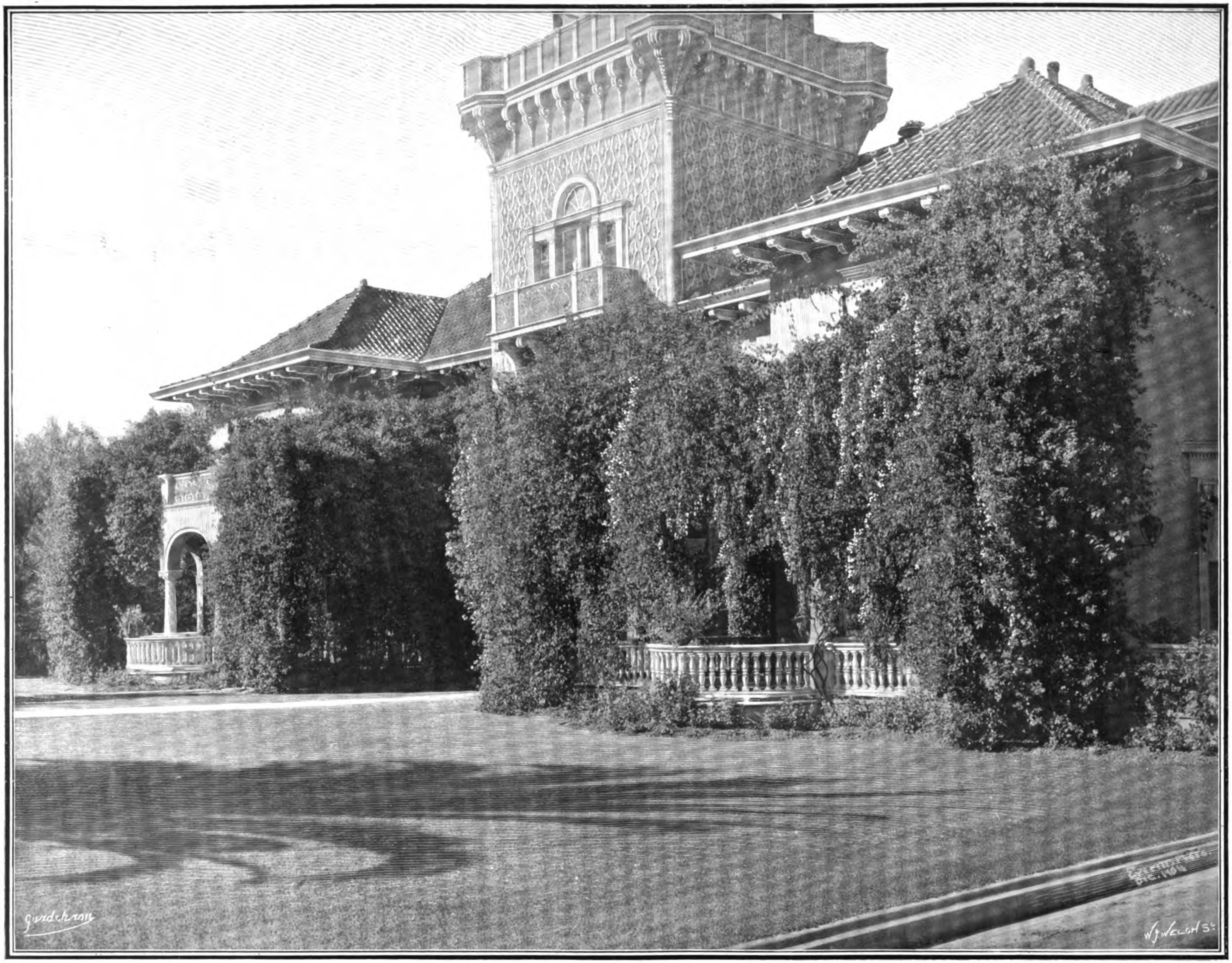
THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord ONSLOW to enquire into and report upon the Fruit Industry of Great Britain held sittings on the 7th to the 10th inst. The following members were present: Mr. A. S. T. Griffith-Boscawen, M.P. (Chairman); Colonel Long, M.P., Mr. C. W. Radcliffe-Cooke, Mr. Hodge, Mr. Vinson, Dr. Somerville, Mr. P. Spencer Pickering, M.A., F.R.S., the Rev. W. Wilks, M.A., and Mr. Ernest Garnsey (Secretary). The Committee had under their consideration the draft report prepared by the Chairman.

ROYAL BOTANIC SOCIETY OF LONDON.—We are informed that the Society has arranged to hold its second annual horticultural exhibition on Wednesday, Thursday, and Friday, June 7, 8, and 9, instead of June 14, 15, and 16, as originally proposed. This is in addition to the usual monthly shows.

FORESTS, WILD AND CULTIVATED.—Dr. A. HENRY will discuss this subject at the meeting of the Horticultural Club on March 28. The lecture will be illustrated with lantern slides.

PREVENTION OF CORRUPTION BILL.—In the House of Lords on the 13th inst., the LORD CHANCELLOR, in moving the second reading of this Bill, said he had received a letter from the principal bankers of London urging the high importance of this measure to the commercial community, and expressing their earnest hope that the Government would pass it into law. That was a remarkable document, which ought certainly to receive considerable attention. He hoped the Government would take care that the Bill should pass, and should not be lost again at the end of the Session. It dealt with a very serious and crying evil, which, by the confession of all persons, required remedy. Lord AVEBURY

Supplement to the "Gardeners' Chronicle."



BOUGAINVILLEA SPECTABILIS, 28 FEET HIGH, IN FLOWER ON THE DWELLING OF MR. HENRY FISHER, REDLANDS, CALIFORNIA.

From a Photograph taken in October last.

said that the letter to which the noble Lord on the Woolsack had referred was signed by every one of the clearing bankers of London. He would add also that it expressed their thanks to the Lord Chancellor for having on more than one occasion carried the Bill through the House of Lords, and their hope that the Government would carry it through the House of Commons. The Archbishop of Canterbury said that the Bill had the support of a great many people outside the ranks of business men, who were desirous of promoting a reform urgently needed in the interests of the general morality of the country. He earnestly hoped the Bill would be placed on the Statute-Book that session.

The Shamrock.—Messrs. Ramsay & Son, of Ball's Bridge Nurseries, Dublin, have received an order from the commanding officer of the Royal Dublin Fusiliers at Malta, to supply 1,000 sprigs of Shamrock to be worn by the soldiers of the regiment on St. Patrick's Day.

Presentation to a Gardener.—An interesting presentation, consisting of a silver tea-service, was made on Saturday evening, March 11, by the committee of the Rochdale and District Chrysanthemum Society to Mr. E. Hubbard, who is leaving the district to take up the position of head-gardener at Colonel G. Kemp's residence at Lingholm, Keswick.

"Illustriertes Handbuch der Laubholzkunde."—This is the third part of a very valuable treatise on the trees and shrubs which are hardy in Central Europe and a portion of Britain. The text is in German, with numerous contractions, which are embarrassing at first, but to which the reader soon becomes accustomed. The numerous illustrations are very helpful, so that in spite of the language in which it is written the book will be of great service to all students. The author is Mr. Camillo Karl Schneider, and the publisher is Gustav Fischer, of Jena. Any foreign bookseller, such as Messrs. Williams & Norgate, could procure it. We observe that the name Calycanthus is replaced by that of Butneria, which is a very unfortunate change. The present part contains details of many genera specially interesting to gardeners, such as Berberis, Magnolia, Philadelphus, Ribes, Escallonia and Platanus. The author considers Platanus acerifolia, our London Plane, to be a hybrid between P. orientalis and P. occidentalis.

The Chambre Syndicale of Ghent.—We have already had occasion to mention the twenty-fifth anniversary of this Society, which has done such great service in watching over and promoting the interests of commercial horticulture in Belgium. The exhibition held on the occasion (February 5) was the most important of its kind, and was well supported, not only by the Ghent nurserymen, but by exhibits from the Brussels Botanic Gardens, the Marquis De Wavrin, and others. The banquet held in the great hall of the theatre was also a great success.

A New Name for an Old Practice.—Mr. Galton has introduced the name "eugenism" or "eugenics" to connote the selective process employed in selecting the most suitable parents for breeding purposes, whether in animals or in plants. Mr. Groff, of Simcoe, Ontario, Canada, has established a great reputation for his cross-bred Gladioli, and in commenting upon them he is very energetic in pronouncing upon the necessity of making use for breeding purposes of the most highly developed "tame species," as he calls them. He deprecates crossing with wild species—meaning, we suppose, those that are the ancestors of our present races. Of course there is much reason in this, for to do otherwise would be to revert rather than to progress, to start from the same point from which our fathers did, or approximately so. Nevertheless, there may be cases in which it is desirable to go back to the wild form to secure vigour of growth, which may have been impaired by continuous inbreeding. Again, there are dozens of wild species of Gladiolus not yet introduced, but some of which would in all probability prove valuable as the source of new forms, new shades of colour, and so forth. Of course, time would elapse before the raiser could make sure that his seedlings were suitable to new and varied conditions, but that is the case even with the offspring of "tame" species.

Evesham Market Gardeners' Visit to Paris.—The Evesham market gardeners who visited Paris in January have purchased a handsome silver-mounted claret jug, which this week Mr. McKay has forwarded to M. M. Plique, the French gardener who showed them round the gardens at Vitry that memorably cold day when the Englishmen learnt, among other things, that France is even colder than Evesham. The inscription on the jug is as follows:—"Souvenir from the Evesham market gardeners on their visit to Vitry, January 13, 1905."

"The Gooseberry Growers' Register for 1904."—This is a list of the Gooseberry shows held principally in the North of England during 1904. It contains an enumeration of the kinds exhibited, and of the weights of each fruit, and as it also contains a record of the heaviest berries from 1809 to 1904 inclusive, it is really a statistical document of some importance. For the year 1904 we find the heaviest berry was one called Jumbo (red), which weighed 29 dwts. 6 grains; Ringer (a yellow berry) weighed 29 dwts. 4 grains; Surprise was the heaviest green berry, 27 dwts. 8 grains, and Transparent was the heaviest white berry, 28 dwts. 29 grains. "London" still holds the premier position with a weight of 37 dwts. 7 grains in 1852, and for many years in succession it was the heaviest berry. Other berries weighing 30 dwts. and over are Lion, Bumber, Wonderful, Antagonist, Ringer, Macaroni, Garibaldi, Bobby, Rover, Leveller, Dr. Woolley, Stockwell, Ploughboy, and Lord Derby. "No labour, care, or skill is considered excessive that results in producing the monster Gooseberries so often ridiculed, but which are really triumphs of skill and trophies of culture and perseverance." We have shown that the records are of scientific value, and if some further information as to the habits of the bushes, the shape and size of the foliage, and the conditions under which the bushes are grown, the record would be still more valuable. The book can be had from Edward Foulds, Bingley.

Illustrations of Choice Vegetables.—We have received from Mr. Ernst Benary, the well-known German seedsman at Erfurt, the first part of a work that promises to become of first-rate importance to cultivators of choice vegetables. Part I. of *Vegetables Photographed from Nature* includes eight loose plates upon thick art paper, each measuring 20 by 18 inches, and representing types of the following vegetables: Cabbages, Red Cabbages, Borecoles, Endives, Onions (Tripoli), and Radishes. The work is in no sense a seedsman's catalogue, and the names of the varieties appear as a rule without the name of any particular firm as a prefix or affix. On the two plates devoted to green Cabbages, for instance, such varieties are shown as Enfield Market, Oxheart, St. John's Day, Early York, Winnigstadt, Brunswick Drumhead, Fottler's Improved, &c. Some of the varieties, though not all of them, are well known to cultivators in this country, and the reproductions are so excellent that easy comparisons may be made between familiar types and others that are less well known. Interesting differences are shown in the manner in which the leaves are folded over each other to form what is commonly termed the "heart." The Filder or Pomeranian Cabbage, for instance, has a "heart" which represents an acute if miniature pyramid of quite opposite shape to that of the well-known "Drumhead" type. The Red Cabbages, of which six varieties are shown, more nearly resemble each other in form, but there would doubtless be differences in habit, earliness, &c. Seven varieties of Borecole are illustrated, of which the Dwarf Green-curled (extra selected) appears to be a very desirable type with profusely curled leaves. Of the eleven varieties of Tripoli Onions, few of the names would be familiar to our readers, but in other respects the bulbs, like those grown in this country, vary greatly in form, some being quite flat, and others representing perfect globes. The illustrations of Endives are less convincing the plants are difficult subjects to reproduce, and for this reason a leaf of each variety is shown separately. As many as fifteen varieties of Radishes are illustrated, and they represent every modification in shape between the long root and that of Turnip-shape, but, in view of the importance cultivators attach to the amount of top-growth particulars varieties make when forced, it would have been well to have reproduced the plants in their entirety. It should be mentioned that this is an English edition, and although printed in black-and-white, a duplicate plate of the Onions is coloured, in order to show that an edition of the work may also be obtained in which each vegetable is reproduced in its natural colour. One part will be issued every year at the price of six shillings.

Market Grower's Daffodil.—Mr. W. B. Hartland sends us a box of the single Trumpet Daffodil Cervantes, with photograph taken at Christmas from plants grown under glass. This is the earliest period it has flowered in any year with Mr. Hartland, but Mr. Clarence Webb, of Kendal, and others have had it in bloom much earlier. The blooms are pale-straw colour, and in size like those of Princeps. North Star is much smaller, but can be bloomed in November. "The flowers sent herewith are from the open; we have been cutting them for a month. We have plenty of varieties now out-of-doors, including the White Trumpet sort Bishop Mann." Mr. Hartland also sends flowers of Eupatorium vernale, as mentioned in last report of the Royal Horticultural Society, where it received an Award of Merit at the Floral Committee, February 9 1904. It is all that can be desired as a winter-blooming market plant.

Don't Sit on the Bananas.—This instruction should, in the opinion of the Archbishop of the West Indies, be displayed prominently in all schools in the islands, so that the children may learn what not to do. His Grace had observed how good-natured drivers were in the habit of giving a lift to weary travellers, and that very frequently these travellers took their seats on the Bananas as they were being conveyed from the plantations to the quays. The result was that on their arrival in England the fruits were found to be bruised and rotten, and the price obtained was lowered in consequence. Surely some method could be devised of securing the continuance of human kindness without injury to the Bananas!

Forestry in the United Kingdom.—Dr. W. Schlich has done good service by reprinting with additions the substance of various lectures that he has delivered on the subject of forestry, as well as of articles contributed by him to these columns. In these papers he points out (1) the importance of the forestry problem to the nation (2) and the measures which should be taken in this country to insure the benefits offered by forestry, (3) adds notes on the afforestation of surplus land and the treatment of some types of British woodlands. There are many who would be deterred from reading the author's *Manual of Forestry*, authoritative though it be, who would be glad to peruse the present modest treatise and in some cases to make its perusal preliminary to a careful study of the Manual. We strongly advise all who are concerned in the management of woodlands or in the afforestation of suitable areas to become the possessor of this little book, which is published by BRADBURY, AGNEW & Co., Bouverie Street, E.C.

WEATHER VAGARIES. — In this country we have had a large and varied assortment of samples so far as weather is concerned, but, on the whole, we cannot be said to have had a severe winter. In Southern Europe affairs have been very different, and even in India the temperature in the northern and central regions has, says *Indian Planting and Gardening*, been as low as 22° Fahr., and even lower. In Calcutta itself the temperature has been as low as 40°, which was felt to be very uncomfortable in "muggy Bengal."

"BOTANICAL MAGAZINE." — The March number contains coloured illustrations of the following plants:—

Romneya trichocalyx, Eastwood, t. 8002. — NICHOLSON in *Gardeners' Chronicle*, 1902, ii., p. 190. A Californian Poppy with finely-cut glaucous foliage, large white flowers. 6 inches across. It differs from R. Coulteri in its densely setose calyx. Kew.

Dendrobium regium, Prain, t. 8003. — An Indian species described by Mr. Rolfe as very like D. nobile in habit. The flowers are nearly 3 inches across, with the perianth segments spreading, rosy-pink, whitish at the base; sepals oblong, petals broadly ovate, lip projecting, convolute at the base, front lobe ovate, acute, rosy-pink with darker stripes; throat and tubular portion of lip yellow. It was sent from Calcutta to Kew.

Rosa Hugonis, Hemsley, n. sp., t. 8004. — A species from Western China raised at Kew from seed collected by Father HUGO. It has straight prickles of various sizes, adnate stipules, pinnate leaves with five lateral pairs of narrow, oblong, serrated leaflets, and one single terminal leaflet; flowers solitary, 2 inches across; sepals linear lanceolate; petals yellow. The shrub is hardy at Kew, and is an acquisition to the "garden" Roses.

Æchmea lavandulacea, C. H. Wright, t. 8005. —Discovered by Mr. BROADWAY in Grenada, W.I., on rocks overhanging the sea. The leaves are broadly strap-shaped, serrate, and recurved near the top. The peduncles are rose-coloured with lanceolate bracts of the same colour. The flowers are numerous, distichous, that is placed in dense rows one row on each side of the branches of the panicle. The secondary bracts are of a greyish-lavender colour, and covered with whitish, fluffy scales; corolla deep violet. Kew.

Nicotiana Forgetiana, Hemsley, ex Hort. Sander, t. 8006.—This species, which had been previously named but not described, is one of the parents of the beautiful N. Sanderæ ×. As the hybrid is likely to displace the original species, it is satisfactory to have this description and illustration. In itself it is very attractive, though less so than its offspring. It has oblong, acute leaves and loose panicles of rose-coloured flowers on slender stalks. The calyx is slightly irregular, and the lobes of the corolla are ribbed in the centre. One of the five stamens is shorter than the other four. It is a native of S. Brazil, and was introduced by M. FORGET to Hort. SANDER.

Obituary.

T. M. CROOK. — The death occurred on March 8 of Mr. Thomas Miller Crook, Stanley Grange, Hoghton, near Preston, aged forty-five years. Mr. Crook was well known in the district as a cultivator of Orchids.

MRS. COCKER.—We regret to announce the death, on the 13th inst., of Mrs. Cocker, wife of Mr. Cocker, the well-known nurseryman, Springhill, Aberdeen.

THE FERNERY.

CULTURE OF HARDY FERNS.

Now that Ferns have benefited by a long winter's rest, and are still so far in a dormant state that there is no new growth liable to damage, it is obviously the right time to rearrange, repot, and divide the plants. These operations are best effected in March, and under glass they cannot be undertaken too soon. Out-of-doors, the end of the month is early enough, especially as it is not well to expose the Ferns, which presumably have been protected throughout the winter by their old fronds, dead or alive, prematurely to risk of damage by removing this protection and subjecting them to cold drying winds. Pots, pans, and all similar receptacles should now be overhauled and cleaned, and the contained plants shifted and repotted according to their needs. Fine specimens in large pots often remain in good healthy condition for many years, and if last season's growth was satisfactory they can be left alone, or at most a little mulching of fresh soil may be added. If, on the other hand, they have diminished in size, it is best to turn them out, when quite possibly it may be found that the great mass of soil has gone sour, and the bulk of the roots has perished in consequence. In this case all dead material should be pulled away, and the Fern installed in a smaller pot with fresh compost. The best general compost consists of a mixture of half good yellow friable loam and half brown fibrous peat, with a liberal quantity of coarse silver-sand, the whole being rather lumpy than fine. We must not forget that Nature in Fern habitats uses no sieve and the soil there is generally some such mixture as above, and consequently very open and porous. Sifted soil, on the other hand, is very apt to cake and become sour owing to lack of aëration.

Ferns may be roughly divided into two classes—those which form crowns round which the fronds are arranged circularly, and those which produce their fronds singly and at intervals on creeping rootstocks. The common Male Fern is a type of the former, and the common Polypody of the latter. Some species, like the Spleenworts, Blechnum, Parsley Fern, and Hart's-tongue, stand in a sort of intermediate category, since, though they really form crowns, they are on a smaller scale, and the fronds are less obviously arranged in circles. Hence, while it is advantageous to those Ferns which form large and definite crowns to be grown singly, and to have their offsets or sideshoots removed, the others are best left to themselves to form those clumps which constitute good specimens, because for one reason their fronds are narrower, and therefore do not interfere so much with each other as do those of a broad and feathery nature when growing in crowded clumps.

For propagating purposes merely it may be stated that every growing crown, large or small, really represents an individual Fern, hence all but those with rambling root-stocks can be multiplied by careful separation, either by cutting the connections or pulling away, when a bundle of independent roots is found to be attached; while with those of the Polypody type, an inch or two of the creeping root-stock, provided with a growing top, a frond and some root-fibres, provides like material in a different form. The large crowns of the Lastræa type produce side-plants or offsets first of all by a protrusion, which is really a large bulbil, and this proceeds to form both fronds and roots, the latter of which soon render it independent of the mother plant, from which it can then be wedged off by inserting a blunt instrument behind it, and so breaking the connection; the young plant is then ready for a quite independent career, and since the subsequent development of itself and its fellows involves a struggle with the old plant, the benefit of removal is obvious. The result is that a Fern which would grow in a stunted fashion, say 2 feet high in a clump, with its special varietal features reduced considerably, would attain nearly double the size when grown singly, and would be far more beautiful and graceful in appearance. Many of the Shield Ferns produce bulbils at the bases of their fronds, and in some varieties profusely all the way up, and by removing these bulbils, with a piece of the frond-stalk to which they are attached, inserting them in soil and keeping them close, numerous typical plants are obtainable much more rapidly than from spores. These should, therefore, be sought for and profited by when shifting and dividing and removing the *débris* of past frondage. Finally, I should add that in writing the above I have in view not the common forms of British Ferns which are hawked in the streets and sold as such by most nurserymen, but the far more beautiful varieties which have arisen from these by sportings, and of which there are hundreds of choice forms. The common forms are only in their place in their native woods and glens, and are quite eclipsed for cultural purposes by their choicer descendants. *Chas. T. Druery, F.L.S., V.M.H.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE FINEST CRYPTOMERIA JAPONICA.—I hoped the correspondence on this Conifer would have elicited particulars of some really fine tree, but at present the Pencarrow tree is the largest of which measurements have been given. Some ten years ago two other specimens of this species at Dropmore were as fine as that quoted by Mr. Page. One grew by the carriage-drive, and was the fellow to that just cut down, inasmuch as they were both "a present from the Hon. Mr. Grenville, who assisted in the planting." The other grew near the beautiful Tsuga Mertensiana, then called Abies Albertiana, and was by many considered the finest of the Dropmore Cryptomerias; but it seems that the Pinetum specimens must have latterly outstripped the others, or Mr. Page would have quoted them when enquiring for finer specimens. I have several times noted that Cryptomerias grow away rapidly for many years, and then suddenly make no perceptible development for three or four or even more years. This partial suspension of growth is frequently most noticeable where the trees are in a comparatively dry soil, and I have an idea that this check coincides with an unusually dry year, which would naturally affect a moisture-loving tree such as the Japanese Cryptomeria. But unless annual records of growth and of the rainfall were kept, one can only theorise on these points. I feel convinced that the tree under notice thrives best when growing in a fairly good well-drained loam in a moist situation, and that the last is not the least essential condition. Returning to fine specimens, on p. 89 of the "Report of the Conifer Conference" Mr. Dunn said of this tree: "The finest specimen in England is at Boconnoc, 64 feet in height and 7 feet in girth." That was, of course, in 1891; but since then this tree apparently has met with some misfortune, or Mr. Page, who was so recently in charge at Boconnoc, would have quoted so fine a tree. *A. C. Bartlett, Pencarrow Gardens, Cornwall.*

EARLY PEACHES.—If a census were taken from gardeners I do not think Alexander Peach would receive many votes either for its suitability for cultivation under glass or against the open wall. My predecessor here gave it a trial in the early house for a couple of seasons, but its bud-dropping habit caused it to be removed to an unheated structure, where it proved to be just as bad; and eventually it was relegated to the Peach wall out-of-doors, and even there a full crop was so uncertain on account of the buds falling in early spring that I was forced to discard it altogether. This variety is certainly one of the earliest Peaches to ripen, but, as a correspondent says, it has another fault, of splitting at the stone even under good cultivation—a fault that would condemn any Peach. Hale's Early is another variety that loses many of its buds in the early house here, and it is seldom we get a good crop, yet we cannot dispense with it, as we know of no other variety that ripens its fruits so early and is as fine and good as this. We have not tried Amsden June for forcing, but on the outside wall it is very satisfactory, and a much better Peach in every way than Alexander. I am inclined to think soil as well as climate has a deal to do with bud-dropping, and I agree to a great extent with what Mr. Divers stated on p. 125, that all the American varieties are the greatest offenders in this respect. I have also found that bud-dropping is more prevalent in comparatively light porous soils than in retentive ones. In regard to the newer varieties, Duchess of Cornwall and Duke of York, it is to be hoped these will prove immune from bud-dropping, but as yet I have no experience of their behaviour. *J. Mayne, Bicton Gardens, Devon.*

VIOLETS FROM SCOTLAND.—I send herewith a bunch of "Czar" Violets, gathered from under a wall out-of-doors facing to the west, from a double row of plants of about 150 feet in length. I have to-day picked eight bunches similar to the one sent; and a week ago I obtained a similar quantity, having been gathering more or less since the first week in February. The plants are given no attention excepting that they are re-planted annually in May. We use single-rooted pieces and plant them at 9 inches apart, the soil being previously enriched with decayed leaf-soil. We do not even remove the runners, as we find they flower freely from these. There may be single Violets superior in size of flower and length of stalk to the Czar, but hardly more floriferous or sweeter in perfume. To fill the box I send also a bunch of Double Blue Violets, and some white ones, from frames. *F. Street, Ardwell Gardens, Ardwell, Wigtownshire, N.B.* [All the flowers are of good quality. Ed.]

MACHINE v. HAND-CUT BOOK-LEAVES.—Your correspondents appear to have overlooked the fact that the edges of leaves cut by hand are always rough and uneven, especially in the case of such a bulky paper-covered volume as the *Journal of the Royal Horticultural Society*. The book therefore does not shut tightly, and in the course of a year or so becomes laden with dust—to say nothing of possible germs and microbes. In a gardener's house it is impossible to keep all such publications, valuable as they are, in a closed book-case. The *Journal* may be termed an occasional publication, but if our weekly *Gardeners' Chronicle* were to be delivered uncut, I am afraid many a howl would reach the Editor as well as the Publisher. *A. C. Bartlett.*

DAFFODILS AND SKIN IRRITATION.—Though I have been closely associated with the early forcing of Daffodils for nearly twenty years, handling as many as 300,000 in this way in a season, and am also familiar with the produce of many acres from the open ground at a later date, necessitating considerable assistance, I have only known of two instances where any irritation has been caused. The first of these occurred some fifteen years since; the second is an experience of the present season, and by no means so acute or so bad as the first. In both instances not only were the hands and arms affected, but the face or any portion of the body that was touched with the hand also became inflamed in a short time. It appears that the irritation affects the flower-gatherers rather than those who bunch the flowers, the hands of the former coming into direct contact with the exuding juices of the plant. In the first instance the irritation and inflammation were so severe that I was compelled to take the man from the work. He was the only one affected out of a dozen or more. I am not of the same opinion as Mr. J. Walker, that chapped hands or dirty hands have much to do with the matter, but rather that some persons naturally are more susceptible to these attacks. Of course if a cut or scar exists on the hands, and the juices come into contact with it, there is every reason for the attack. In the instance referred to there were no such scars existing, and the bare arms—for my men usually gather with the sleeves uprolled—were as badly affected as any part of the hand. I have never tried the effect of putting grease on the hands, and from the way much gathering polishes the finger-tips and hands, should doubt its efficacy. If gloves are at all practicable, the finger-tips should be removed. By reason of the quickly polishing and drying effect the gathering of Daffodil flowers has upon my own fingers and hands generally, I frequently hold them in the water-tank and give them a good rubbing together through the water. It is curious to note that the person who suffered from gathering the early or forced blooms were not affected when gathering those grown in the open. It is also interesting to note that while I was probably one of the earliest and worst sufferers in England from the irritation caused by Primula obconica, I have never experienced any discomfort from the Daffodils. Equally interesting is the fact that the person who, years ago, suffered much from the Daffodils could handle the Primula with impunity. It is the same to-day, and the worker who suffers from the Daffodil irritation is not in the least affected by the Primula. Hence I regard the susceptible nature of the skin to be a more or less predisposing cause when cuts or scars are absent. *E. H. Jenkins, Hampton Hill.*

SEED PACKING FOR LONG SEA JOURNEY.—It was my misfortune a few years ago to receive instructions from a South African gentleman to have a quantity of seeds sent out from England to his estate in the Transvaal. I put the order in the hands of one of the most competent British seedsmen, but he gave it to an ordinary packer, and the seeds were sent as if they were only to go a few miles. When they were received in Africa they were perfectly wet and useless. The gentleman was very much annoyed, as there was a season lost in growth before a second consignment could be sent out, and although the seedsman offered to repeat the order free of all charge, the client was so disgusted at what he termed British methods that he would have nothing further to do with the matter. I may say that I have always understood that seeds going a long sea-journey should be sent in hermetically sealed tins; but I may also add to the foregoing that I have received seeds from Africa in good condition when not hermetically sealed. But these would be carried with passengers' luggage, and in specially dry quarters, and not with ordinary freight. *H. R. Whitelaw.*

THE WEATHER AND WATER SUPPLY.—There is a general complaint in this neighbourhood, and I believe also in some other districts, that the ordinary wells are not yielding their usual supply of water, and that field pits and ponds are unusually low. To farmers and gardeners a plentiful supply of water is absolutely necessary, and the present threatened scarcity and long-continued absence of rain seems to encourage a belief or fear amongst them that unless rain comes quickly and copiously we are in for a dry season. Those people who happen to be favoured with a stream flowing through their grounds would do well to lose no time in putting a barrage across it, and thus save themselves sufficient water to tide them over the predicted scarcity. A few slabs or stakes driven into the bed of the brook or streamlet, and these backed by a little puddled clay or some turves, would suffice to form an effective dam. This barrage should be completed and the head of water saved whilst the stream is still in good flow; this neglected, all the water will have run to waste by finding its way down the valley to the nearest sea. This economical and cheap system of providing a rural water storage might be multiplied infinitely all over the country wherever there is a small stream which could be so operated upon. I have had for a number of years this arrangement in my grounds here, which has afforded my cattle a plentiful supply of water through several dry seasons, and thus saved me much trouble and expense. If anyone has the means of putting down a more permanent brick or stone barrage all the better. But these are not the times to suggest expensive work for either landlord, farmer or gardener, if a more temporary and less expensive arrangement will answer the purpose as well. It may be gathered that my reason for advising a timely storage of water is that all the small streamlets in this neighbourhood, and I believe also in most others in the midland counties, become practically dry during seasons of long-continued drought. *W. Miller, Berkswell, Coventry.*

THE BRITISH GARDENERS' ASSOCIATION.—A special meeting of the Kingston Gardeners' Society has been arranged for the evening of Friday the 24th inst., in Fife Hall, close to the railway-station, when Mr. W. Watson, of Kew, will address the members in reference to the objects of the Association. Mr. Watson specially wished to come to Kingston, and the date has been purposely arranged to suit his convenience. As the objects of the Association seem to have aroused considerable interest, many gardeners resident in the neighbourhood not members of the local Society may wish to attend the meeting, and they will be cordially welcomed. Whatever may be the general opinion as to the merits or otherwise of the objects of the British Gardeners' Association, Mr. W. Watson is a distinguished botanist and gardener, and should be given a very cordial reception and a good audience. *Kingston.*

GRAPE-FRUIT.—The Grape-Fruit is generally considered to be a variety of the Pumelo, Citrus decumana. It is so described in the *Century Dictionary*, and in your own columns a contributor identified it as such a few years ago. I have just seen the fruit for the first time, and find its seeds have more than one embryo. This is characteristic of the Orange, but I have never found the Pumelo with more than one embryo in its seed. The other features of the fruit being intermediate between the Orange and the Pumelo, it most probably is a hybrid, and if so its history should be recorded. Possibly some of your American correspondents may know the facts of the case, and place beyond doubt the origin of this interesting and ornamental fruit. *G. Marshall Woodrow.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

March 14.—An excellent display of very varied exhibits was made on Tuesday last in the Royal Horticultural Hall, Vincent Square, Westminster. There were showy groups of Orchids, which included some valuable novelties.

The Orchid Committee recommended no fewer than ten Awards of Merit.

The Floral Committee recommended seven Awards of Merit, including one for Heloniopsis breviscapa, a species probably new to cultivation. Eleven Medals were awarded for groups of plants and flowers of very diverse character. These included an interesting collection of Platyceriums from Messrs. Hill & Sons, and a group of Camellias from Messrs. W. Paul & Son.

The Fruit and Vegetable Committee made no Award to novelties, but some well-preserved Apples were shown in a collection.

The Narcissus Committee met for the first time this season, but little of interest was forthcoming.

At the meeting of the Scientific Committee, Dr. M. T. Masters, F.R.S., on behalf of the Committee, presented Prof. Henslow with a service of plate, in recognition of the valuable services he has rendered to the Committee during the many years he acted as its Honorary Secretary (see p. 168).

In the afternoon over eighty new Fellows were elected, and the Rev. Prof. Henslow delivered a lecture on "Bud Variation," the subject being well illustrated by a number of lantern slides.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. C. T. Druery, F. Page Roberts (Rev.), Jno. Green, R. Wilson Ker, G. Reuthe, R. Hooper Pearson, C. J. Salter, Jno. Jennings, C. Blick, C. Dixon, C. Jeffries, C. E. Shea, Ed. Mawley, W. P. Thompson, E. H. Jenkins, W. Cuthbertson, J. W. Barr, Geo. Paul, H. J. Cutbush, Geo. Nicholson, Jas. Walker, C. R. Fielder, and W. Howe.

A new variety of rambling Rose was shown by Messrs. Hobbies, Ltd., Dereham, Norfolk. It is named "Philadelphia Rambler," being an introduction from America. The flowers appear to be rather fuller and certainly of deeper colour than those of Turner's Crimson Rambler; but the Committee desire to see specimens that have been cultivated out-of-doors.

Lathyrus pubescens, a very pretty and fragrant greenhouse species with pale blue flowers was shown from Lord Rothschild's garden, Gunnersbury House, Acton (gr., Mr. Geo. Reynolds). It received an Award on April 21, 1903.

Shortia galacifolia rosea, a variety shown by Messrs. W. Cutbush & Sons, has flowers of deeper colour than the variety lilacina, and is the richest tinted form of this very pretty plant we have yet seen.

Magnolia Campbelli (see fig. in *Gardeners' Chronicle*, Feb. 5, 1898, p. 89) is one of the handsomest species. It is a native of Sikkim, but the flowers hitherto produced in this country do not rival those in their native habitat. Richly-coloured flowers were shown on this occasion by Lord Ilchester, Abbotsbury, Dorsetshire (gr. Mr. H. Kempshall).

Fritillaria discolor was shown by Miss Willmott, Great Warley, who had several pots full of well-grown plants about 1 foot high. The species obtained an Award on January 11, 1887, under the name of Korolkowia discolor. The flowers are greenish-yellow-coloured, with purple markings at the base of the corolla.

Mr. L. R. Russell, Richmond Nurseries, Surrey, exhibited a large group of forced flowering shrubs, in which considerable variety was represented. The best features were some plants of Rhododendron (Azalea) Anthony Koster, Ribes sanguineum, Xanthoceras sorbifolia, standard Lilacs, standard Laburnums, &c. There was one plant of the new Jasminum primulinum in flower (from a cold house), and several plants of Clerodendron Balfouri in flower.

Messrs. W. Cutbush & Sons, Highgate Nurseries, London, N., again made a very large display of forced trees and shrubs, including most of the species shown on the last occasion. The standard specimens of Laburnum were very fine, 7 feet or more high; double-flowered Thorns several feet higher, Staphylea colchica, Ribes, and Rhododendrons. Messrs. Cutbush also exhibited excellent plants of Boronia megastigma, Erica gracilis ovata vernalis, Boronia heterophylla, and Mignonette "Cutbush's Giant," there being groups of each of these plants. Messrs. Cutbush & Sons also displayed a large collection of alpine and hardy plants, placing such plants as Daphnes, Dwarf Conifers, and other small shrubs suitable for rockeries toward the background (Silver-Gilt Flora Medal).

Messrs. W. Paul & Sons, Waltham Cross Nurseries, Herts, exhibited a group of Camellias in pots and a number of cut Camellia flowers arranged in boxes. At a time when Camellias are so much neglected generally, such collections of choice varieties as are shown by Messrs. Paul are specially interesting (Silver-gilt Banksian Medal).

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, exhibited a collection of choice Ferns, such as Polystichum mucronatum, Adiantum cardiochlæna, Lastrea erythrosera, Davallia Tyermani, &c. The remainder of the table was occupied by greenhouse-flowering plants (Silver Flora Medal).

Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, furnished the concert platform with a splendid collection of Platyceriums, placing sufficient Ferns of other types among them to give suitable relief to the group. The centre of the display was occupied by a grand plant of P. grande, while on either side were arranged specimens of P. Hilli, P. angolense, P. æthiopicum, P. Willinckii, P. Veitchii, P. alcicorne, P. a. majus, &c. (Silver-gilt Flora Medal).

Messrs. Sutton & Sons, Reading, filled one of the side tables with pot plants of Hyacinths. The display was divided into three batches, with white, blue, and blush-rose coloured flowers respectively, while the whole was pleasingly interspersed with small Ferns. The strain is intermediate between the ordinary Dutch and Roman Hyacinths, the flower-spikes being tall and the flowers highly fragrant, a type suitable for decorative purposes, and said to be especially serviceable for early forcing. They are known as "Italian" Hyacinths.

Messrs. Cannell & Sons, Swanley, Kent, made one of the brightest displays in the Hall with their vases of Zonal Pelargoniums and of Cinerarias. The Pelargoniums would be hard to surpass for size of petals and for brilliancy of colours. Varieties that especially appealed to us were Sir E. Cassel (scarlet), Sir Thomas Hanbury (deep scarlet-crimson, with exceptionally large petals), Princess of Wales (rosy-red), and Prince of Orange (orange-red). The Cinerarias were of the "stellata" type, and were represented in many shades of colour (Silver Flora Medal).

Messrs. John Laing & Sons, Forest Hill, London, set up two semi-circular groups of plants, the one composed of Clivias (Imantophyllums), the other of Begonias. Both groups were relieved with Ferns and small Palms.

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, showed Primula × kewensis, Camellia reticulata, and Rhododendron Veitchii. Messrs. Veitch also showed some excellent forms of Imantophyllums, a batch of Shortia galacifolia, and plants of Senecio auriculatissimus (Silver Banksian Medal).

Mr. S. Mortimer, Farnham, Surrey, displayed a batch of white Stocks, named "All the Year Round." The fragrance of the flowers was very noticeable. The variety is valuable in that it produces flowers earlier in the season than the ordinary type, while later-sown batches will maintain a succession late in the season (Silver Banksian Medal).

Mr. Henry Langston, Nurseryman, Marston, Pembridge, Herefordshire, had several vases of the beautiful deep-blue-coloured Violet Princess of Wales.

Mr. G. Mount, Canterbury, Kent, put up a similar group of Rose-blooms to that displayed by him at the last meeting, with the exception that a few more varieties were included. The same high-class culture was seen as in the previous display (Silver Flora Medal).

Mr. A. B. Wadds, The Gardens, Paddockhurst, staged some well-grown pot-plants of Cyclamen. Each plant carried numerous flowers, some of which were of the crenated-petalled type (Bronze Banksian Medal).

Messrs. Ambrose & Son, Cheshunt, staged a miscellaneous group of greenhouse plants, Roses, Cinerarias, Genista fragrans, Mignonette; also Tulips, Narcissus, &c.

Messrs. H. C. Pulham & Son, 71, Newman Street, Oxford Street, London, showed examples of sandstone, ironstone, and other materials used in the construction of rockeries, water-gardens, &c., with a miniature rock-garden formed of the same material, and photographs of finished work executed by the firm in different gardens.

Mr. Richard Anker, Addison Nursery, Napier Road, Kensington, W., again showed specimens of tufa, and pictures of rock-work and other structures made of this material.

Hardy and Alpine Plants.

The Misses Hopkins, Mere, Knutford, showed a small collection of alpine and hardy plants.

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, showed some excellent plants of Anemone pulsatilla, also Crocuses, Hepaticas, Fritillaria citrina, &c.

Messrs. Barr & Sons, 11, 12, 13, King Street, Covent Garden, London, showed Alpine and hardy plants. We noticed some pleasing forms of Hepaticas, also Sisyrinchium grandiflorum, Iris unguicularis (stylosa), Lachenalias, Scillas, Anemone fulgens, &c.

Messrs. Thos. Ware, Ltd., Feltham, Middlesex, staged Alpine and hardy plants. Among other good things were Sarracenia flava, Trilliums, including T. sessile, forms of species of Primulas, &c. (Bronze Flora Medal).

Messrs. Geo. Jackman & Son, Woking Nurseries, Surrey, contributed a large group of Shortia galacifolia. We also noticed Megasea Stracheyi, Fuchsia microphylla, and a splendid spike of Watsonia Ardernei, Anemones, Irises, Saxifrages, and similar plants.

Adeline, Duchess of Bedford, Woodside Gardens, Rickmansworth (gr., Mr. Dickson), set up an admirable display of Hellebores in vases.

Messrs. B. S. Williams & Sons, Upper Holloway, London, N., staged a number of alpine and hardy plants.

Mr. Jno. R. Box, West Wickham Nurseries, showed a few alpine plants.

Mr. G. Reuthe, Keston, Kent, showed many good species suitable for the rock-garden, &c.—Snowflakes, Saxifrages, Crocuses, Primulas, Irises, Shortias; Anemone blanda was well flowered (Silver Flora Medal).

Mr. A. J. Bruce, The Nurseries, Chorlton-cum-Hardy and West Didsbury, showed a collection of flowers of varieties and species of Sarracenias.

Awards.

Awards of Merit.

Adonis amurensis.—A double-flowering variety of this well-known alpine plant. The flowers have a band of green florets round the central yellow ones, as is occasionally seen in Ranunculuses. Shown by Messrs. W. Cutbush & Sons.

Cantua buxifolia (*dependens*) (see fig. 69, p. 173).—Flowers of this showy and beautiful Polemoniaceous plant were shown by H. J. Elwes, Esq., Colesbourne, Andoversford. It is a very old garden plant from the Peruvian Andes, and bears funnel-shaped flowers having a very long tube. Colour rosy-red, with a little orange colour on the exterior of the tube. The correct name is C. buxifolia.

Carnation General Kuroki.—This is a first-class, bright crimson-flowered Tree-Carnation. The flowers are of good form, with very slightly fimbriated petals, rich colour, non-bursting calyx, and moderately stout stems. Shown by Messrs. W. Cutbush & Sons.

Erica × Veitchii.—This hybrid from E. arborea and E. codonoides (lusitanica) was shown at the previous meeting, and has already been described in these pages (see issues for February 18, 1905, p. 106, and March. 4, p. 138). Messrs. Robert Veitch & Son, Exeter, exhibited a fine bush-like plant, literally covered with its white flowers.

Helleborus orientalis Stephen Olbrich.—This variety has very large flowers of deep reddish-purple colour which is very effective. Shown by Sir Trevor Lawrence, Bart., Burford.

Heloniopsis breviscapa.—This little Japanese Liliaceous plant is apparently new to cultivation. The inflorescences were from 3 to 4 inches high, bore seven or eight flowers each, and the peduncle four or five adpressed rudimentary leaves, characteristic of the genus. The flowers are pure white except for the reddish-coloured pistil and bluish anthers. Shown by Messrs. Barr & Sons.

Pulmonaria arvernensis alba.—This is a pure white variety, the typical form having flowers of deep blue colour. The plant was scarcely 3 inches high, and the flowers are borne in clusters. From Messrs. W. Cutbush & Sons.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, W. Boxall, W. H. Young, W. H. White, A. A. McBean, F. W. Ashton, G. F. Moore, H. Ballantine, J. Colman, R. G. Thwaites, T. W. Bond, W. A. Bilney, and H. J. Veitch.

There was a very good show of Orchids, and ten varieties were given Awards of Merit.

Jeremiah Colman, Esq., Gatton Park (gr., Mr. W. P. Bound), staged a very effective group, in the centre of which was a number of the perpetual-flowering Epidendrum × Boundii, with pretty heads of orange and red flowers. Also in the group at intervals were selections of Odontoglossum crispum, O. triumphans, Lælia cinnabarina, Phalænopsis, good varieties of Cattleya Trianæ, Lælia flava, and Miltonia Warscewiczii. Among albinos was a good specimen of Cattleya intermedia alba (Silver Flora Medal).

Messrs. Charlesworth & Co. had a fine group, principally of hybrids, which included Odontoglossum × Harryano-triumphans, of excellent quality, the larger having the features of O. triumphans latisepalum; good forms of O. × Adrianæ, Brasso-Cattleya × Digbyano-Trianæ Heaton variety, of an uniform warm rose colour; Cattleya × Empress Frederick superba, very near to the previously certificated variety Leonata; L.-C. × luminosa, L.-C. × Wellsiana albens, L.-C. × callistoglossa, a pretty batch of the yellow-petalled L.-C. × Myra. with variously tinted rose-and-purple labellums, a batch of Phaius × Norman, and other showy hybrids. Among the species and varieties were two good purple-spotted forms of Odontoglossum crispum, good O. cirrosum, Spathoglottis aurea, Platyclinis glumacea, &c. (Silver Flora Medal).

Messrs. J. Cypher & Sons, Cheltenham, had a very interesting group, which contained some rare and pretty species specially well grown, and a good show of Dendrobiums, including several of the yellow, fringed-lipped D. Brymerianum, some of the best forms of D. nobile, D. Wardianum album, D. crassinode album, D. × Apollo album, and several other fine hybrids of its class; a good selection of Odontoglossums, including a very fine specimen of the true O. nævium majus; good examples of Epidendrum Stamfordianum, Epiphronitis × Veitchii, some good Cypripediums, Lælio-Cattleya × Impératrice de Russie, and other Lælio-Cattleyas, Masdevallias, Cypripediums, &c. (Silver Flora Medal).

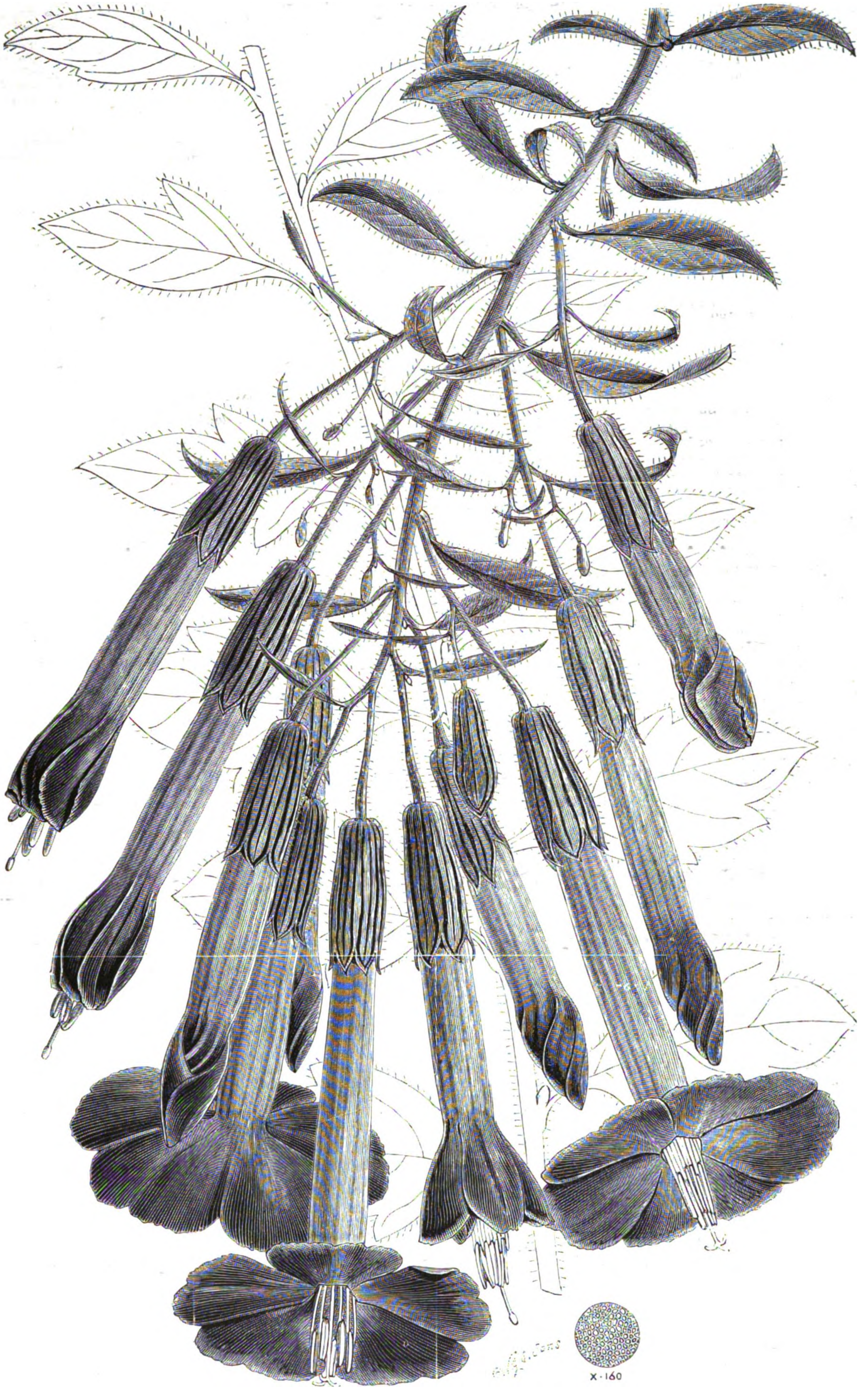


FIG. 69.—CANTUA BUXIFOLIA (DEPENDENS): FLOWERS BRIGHT ROSE-PINK.

Shown on Tuesday last by Mr. Elwes, and recommended an Award of Merit by the Floral Committee. (See p. 172.)

Messrs. SANDER & SONS, St. Albans, staged a group containing several good forms of Cattleya Trianæ, and notably one named "Blue Gown," a fine flower with lavender-tinted sepals and petals, and violet-blue front to the lip. Among interesting species were two plants of the rare and singular Odontoglossum stellatum.

The Right Hon. the Earl of TANKERVILLE, Chillingham Castle, Northumberland (gr., Mr. Hunter), showed a small group of rare Orchids, in which were the delicately-tinted Brasso-Cattleya × Digbyano-Schroderæ Tankervilliæ (see Awards), Cypripedium × aureum virginale and C. × a. Hyeanum, a very finely spotted C. × Helen II., C. × Dora Crawshaw (niveum × Charlesworthii), an attractive flower, rose-purple, tinged and veined; C. × Maudiæ, &c.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), showed Dendrobium × Melpomene inversum, a good yellow flower with purple blotch in the lip; spikes of the rare Odontoglossum coronarium miniatum, and the interesting Epi-Cattleya × Gaskello-Parkinsoni (C. Gaskelliana × E. Parkinsonianum), with singularly-formed white flower tinted with rose.

Captain G. L. HOLFORD, C.I.E., Westonbirt (gr., Mr. H. Alexander), showed Cattleya Trianæ Percival, a large rose-tinted flower; and two others (see Awards).

Messrs. JAS. VEITCH & SONS, Chelsea, showed Dialælia × Veitchii (Diacrium bicornutum × Lælia cinnabarina), a very remarkable hybrid with fleshy pseudo-bulbs resembling those of Diacrium bicornutum, and erect, 2-feet-long inflorescence, bearing on the upper third portion nine or ten flowers about 2 inches across, and with narrow segments, white tinged with lilac, the younger flowers showing a bronzy tint derived from L. cinnabarina. [This plant, on account of its botanical interest, was awarded a Botanical Certificate by the Scientific Committee.]

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), showed Cypripedium × allertonense magnificum with two flowers.

R. G. THWAITES, Esq., Chessington, Streatham (gr., Mr. Black), showed a selection of Dendrobium × Blackianum (Wiganiæ × Findlayanum) displaying great variation, from white with yellow disc to rose-tinted, one of which was very near to D. × melanodiscus. No two were alike, but varied both in form and colour.

Mr. JAS. DOUGLAS, Great Bookham, sent two plants of Cypripedium × Deedmanianum, and a hybrid of C. Lawrenceanum.

Messrs. HUGH LOW & CO., Enfield, showed a fine plant of a supposed natural hybrid between Oncidium Cavendishianum and O. luridum or carthaginense, and named O. Lowii ×; the spike was 7 feet 6 inches in length, with eight branches bearing altogether about 200 yellow flowers spotted with brown.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, sent several good hybrid Odontoglossums, including a finely-flowered O. × ardentissimum (Cultural Commendation).

M. JULES HYE, Ghent, showed Cattleya × Madame Jules Hye (Gaskelliana alba × Mossiæ Wageneri), white with yellow disc, the segments being narrower than in some other white Cattleyas.

F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr., Mr Balmforth), showed Lælio-Cattleya × Gottoiana magnifica, and Cypripedium callosum Sanderæ Shrubbery variety, with much white in the petals and dorsal sepal.

A. H. HOULDER, Esq., Hurst Place, Bexley (gr., Mr. Dyer), showed a fine specimen of Cœlogyne cristata Trentham variety.

Alderman WILLIAM BOLTON, Mayor of Warrington (gr., Mr. Cain), sent Cypripedium Chamberlainianum magnificum, a very large flower, the plant having extraordinary vigour.

The Rev. F. MASON, The Firs, Warwick (gr., Mr. Marlow), showed a good Brasso-Cattleya × Digbyano-Warneri.

Awards of Merit.

Brasso-Cattleya Digbyano-Schroderæ Tankervilliæ [!]. From The Rt. Hon. The EARL of TANKERVILLE, Chillingham Castle, Northumberland (gr., Mr. Hunter).—A very delicately-tinted and finely-fringed flower; white with a pearl-pink blush.

Cypripedium × Chas. Rickman var. magnifica (barbatum nigrum × bellatulum). From Capt. G. L. HOLFORD, C.I.E. (gr., Mr. Alexander).—Flower large and well rounded; lip dark-claret coloured, the other segments rose with purple dots and veining; the top of the dorsal sepal and petals white.

Lycaste Skinneri atro-sanguinea. From Capt. G. L. HOLFORD.—Sepals white tinged with rose; petals bright magenta-rose; lip dark blood-red. A very showy flower.

Dendrobium Wardianum candidum. From J. NEWTON MAPPING, Esq., Headley Park, Epsom (gr., Mr. Beeson).—One of the largest white forms; disc of lip orange with dark chocolate blotch.

Cypripedium × Haywoodianum (× T. B. Haywood × bellatulum). From Mrs. HAYWOOD (gr., Mr. Salter).—A large finely-shaped flower tinted with rose-purple and veined with claret-colour, the upper margin of the dorsal sepal being white.

Odontoglossum × amabile. From M. CHAS. VUYLSTEKE, Loochristy, Ghent.—Flowers cream-white and formed like those of O. crispo-Harryanum, but the petals bore more numerous and smaller reddish-brown markings.

Odontoglossum × Lawrenceanum (triumphans × Rolfeæ).—A fine hybrid with yellow sepals and petals heavily barred with chestnut-brown; lip, white marked with purple. From M. CHAS. VUYSTEKE.

Brasso-Cattleya × Digbyano-Trianæ, Heaton variety. From Messrs. CHARLESWORTH & Co., Heaton, Bradford.—Flower large and heavily fringed, of an uniform lilac-rose colour, with greenish-yellow disc to the lip.

Dendrobium × Chessingtonense (aureum × Wiganiæ).—Flowers large, of bright-yellow colour, with chocolate-purple disc to the lip. From R. G. THWAITES, Esq. (gr. Mr. Black).

Dendrobium × Elwesii (Hildebrandii × aureum). From H. J. ELWES, Esq., Colesborne, Cheltenham.—An attractive flower of good size; cream-coloured, with a purple blotch on the lip.

Fruit and Vegetable Committee.

Present: A. H. Pearson, Esq., in the chair; and Messrs. Jos. Cheal, W. Bates, Geo. Woodward, S. Mortimer, Alex. Dean, H. Parr, Geo. Kelf, W. Pope, P. C. M. Veitch, John Lyne, F. Q. Lane, G. Reynolds, Geo. Wythes, Ed. Beckett, G. Norman, H. Markham, and H. Somers Rivers.

Messrs. H. CANNELL & SONS, Swanley, Kent, staged a large collection of Apples, including 122 distinct varieties. Many of the fruits showed evidence of having been kept far beyond their proper season, but on the whole the display was admirable, the colouring of the fruits being especially pronounced. We may mention Bramley's Seedling, Gascoyne's Scarlet, Lane's Prince Albert, Bismarck, Calville Boisbunce, and Beauty of Kent as being shown in fine condition (Silver Knightian Medal).

Lecture on "Bud Variation."

Professor Henslow's lecture was richly illustrated by lantern slides and actual specimens. After observing that all plants have an inherent power of varying in response to, if not always in useful adaptation to, changed conditions of life, by which new species are introduced into the world, and that many new forms arise under cultivation by the same means, the lecturer observed that sports only differ from such variations in degree and by the suddenness of their appearance, whether as a part of a plant or as a seedling; so that there is often a difficulty in drawing any sharp line between varieties, sports, and even monstrosities. The immediate causes of sports are often very obscure, but can sometimes be reasonably traced to altered distribution of light, as in the changed position of leaves, or again to the amount of formative material present, as in "cut" leaves, &c., or to heat, as in fastigiation. The examples taken as illustrative and explanative were the fastigiate, fasciate, and weeping types of stems, and spiral torsion and spinescence, cut and crisped forms of leaves, multiform, double, crested, and peloric flowers; the change of form, colour, &c., in fruits, and the dissociation or the separation of characters of the two or more parents in a hybrid or cross.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MARCH 2.—There was a moderate display of plants at the meeting held on this date.

S. GRATRIX, Esq., Whalley Range (gr., Mr. Cypher), exhibited Cattleya Trianæ var. Juno, a fine variety having flowers of good shape and substance, and closely resembling a variety of C. Schroderæ in its uniformity of colouring (Award of Merit).

The same exhibitor had two good forms of Odontoglossum crispum, one of which, O. c. var. "Melba," was voted an Award of Merit.

E. ROGERSON, Esq., Didsbury (gr., Mr. Blomiley), received an Award of Merit for Odontoglossum crispum var. "Stanley Rogerson," a pretty variety marked with dark spots. Cattleya Trianæ var. "Our King" came from the same collection.

R. LE DOUX, Esq., West Derby (gr., Mr. Davenport), sent a few plants, the best of which was a splendidly-grown and fine variety of Odontoglossum maculatum with the varietal name "marlfieldense." This plant obtained an Award of Merit.

T. STATTER, Esq., Whitefield (gr., Mr. Johnson), exhibited Dendrobium × whitefieldense, a hybrid of a very prolific nature (Award of Merit).

E. BOSTOCK, Esq., Stone (gr., Mr. Ballance), exhibited Cypripedium × Robsoni, a supposed hybrid between C. insigne Sanderæ × C. × exul.

J. E. WILLIAMSON, Esq. (gr., Mr. Jones), exhibited Dendrobium nobile Williamson's var., a pretty and very chaste flower, being very light in colour except for the well-coloured tips to the petals.

The best feature of the meeting was a magnificent display of plants by Messrs. CYPHER & SONS, of Cheltenham, which included some lovely Dendrobiums, Cypripediums, Cattleyas, Lycastes, and other plants in season (Silver-gilt Medal).

Votes of Thanks for groups were awarded to Messrs. KEELING, MITCHELL, WILLIAMSON, STATTER, ALLEN, PARKER, COWAN, and LE DOUX. *P. W.*

NATIONAL FRUIT GROWERS' FEDERATION.

A MEETING of the Council was held on Monday, March 13, at the Royal Horticultural Hall, Vincent Square, the President, Mr. F. S. W. Cornwallis, in the Chair.

Letters were read from the Board of Agriculture stating that a leaflet was under preparation dealing with the disease of Apple and Pear twigs sent to the Board for indentification.

The Railway Services Committee reported that they were negotiating with the Railway Companies concerned for the cheaper conveyance of manure from Birmingham to the Vale of Evesham; that the South-Eastern Company were, at their instance, considering arrangements for an improved connection between their system and those of the Northern Companies with a view to quicker transit of fruit from Kent to the North of England and Scotland. The Committee also reported that a summary of the evidence proposed to be given by Mr. Miskin before the Departmental Committee on Preferential Rates had been duly sent in.

As a suggestion had been made that a Conference of Fruit Growers should be held next autumn under the auspices of the Federation, the Council considered the matter and decided that such a Conference was desirable, and that the preliminary arrangements shonld be commenced forthwith.

A discussion took place on the terms by which kindred Societies should be allowed to affiliate with the Federation, and the following were agreed to, subject to the approval of the Annual General Meeting, viz.: For any Society whose membership does not exceed 200, an annual fee of three guineas, with representation on the Council by two members. For every hundred members or part thereof above 200, an extra fee of one guinea, with one member of Council to every 100 members. A resolution was unanimously passed declaring the urgent necessity of devising means to prevent the importation of diseased Apples or other fruit, more particularly those affected with the Codlin Moth, such diseased importations being a danger to the orchards and nurseries of Great Britain. The resolution was ordered to be forwarded to the Board of Agriculture.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

ANNUAL MEETING.

MARCH 13.—The Annual Meeting of this Society was held on the above date at the Caledonian Hotel, Adelphi, Strand, London. Mr. W. P. Wright presided. The Annual Report was presented, from which we extract the following paragraphs:—

In many respects the year 1904 has been a record one, no fewer than ninety-five candidates having been admitted to membership, this number showing an increase of twelve over the previous highest number elected in any one year. The membership at the end of the year totals 1,076, made up of 609 paying on the higher scale, and 467 paying on the lower scale.

Sick members to the number of eighty-six have benefited under the Sick Fund, the total paid out during the year being £327 6s., or an average of £3 16s. per sick member. This sum has been met by a deduction of 7s. 5d. from the contributions of the higher-scale members, and of 4s. 11d. from the lower-scale members.

There are now six members receiving regular grants from the Benevolent Fund, and these amount in the aggregate to £99 6s. In addition several members in distress have been assisted to the total amount of £15 4s. 7d., and in these cases the help afforded has been most gratefully acknowledged. Contributions to the Benevolent Fund amounted to £130 4s. 5d.

From the Convalescent Fund £7 has been paid out to members recovering from illness.

Now that the Royal Horticultural Society has acquired a permanent home in Vincent Square, the Committee proposes to henceforth hold the Committee and other meetings of "the United" at the new Royal Horticultural Hall, where accommodation has been promised on particularly favourable terms.

The Annual Dinner held at the Holborn Restaurant on Wednesday, October 12, was again successful.

On the recommendation of the Rules Sub-Committee, the Committee has decided not to call a Special General Meeting to consider the proposed new rules until 1906. The Sub-Committee has met on numerous occasions, and its work, now almost finished, will be submitted to a competent legal authority.

The balance-sheet shows a satisfactory state of affairs, the total receipts from all sources of the Benefit Fund, including a balance of £17,427 8*s*. 6*d*. brought forward from the previous year, amounting to £19,644 19*s*. 7*d*., with a total expenditure of £529 13*s*. 10*d*., leaving a credit balance of £19,115 5*s*. 9*d*. The Benevolent Fund also records a balance of £4,232 13*s*., while that of the Voluntary Convalescent Fund shows £522 4*s*. 9*d*. to the Society's credit.

The Chairman in moving the adoption of the Report congratulated the members upon the condition of the Society, and upon the fact that the number of new members who had joined during 1904 had constituted a record in the annals of the Society. He would like to see the membership number nearer 11,000 than 1,100, and thought much might be done towards this end. He also contrasted the benefits derived from joining this Society with those obtainable from ordinary friendly societies, who had expensive establishments to maintain and a host of highly-paid officials to support. He further counselled all those connected with the Society to urge the claims of the institution upon their fellow-workers. The employment of paid canvassers to undertake this task he deprecated on account of the expense it would necessarily entail, but stated that the Gardening Press was always ready to help forward any good work connected with gardening. The admirable way in which the Society was managed was to be seen in the small amount debited to the Management Fund, which, out of a turnover of over £20,000, only amounted to £265 17*s*. 5*d*.

Mr. Curtis seconded the adoption of the Report, which was carried unanimously.

Mr. A. J. Brown, an old member, regretted the slow progress made by the Society, and suggested that the age limit be lowered in order to encourage a juvenile influx of membership. He also regretted that the Committee was waiting until 1906 before embodying the revised rules as recommended by the Rules Sub-Committee.

The retiring members of the Committee were all re-elected. Mr. Collins was re-elected Secretary.

MARKETS.

COVENT GARDEN, March 15.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Acacia Drummondi, per doz.	18 0-24 0	Cyperus laxus, dz.	3 0- 4 0
— arcuata, per doz.	12 0-18 0	Dracænas, p. doz.	9 0-24 0
Aralia Sieboldi, doz.	4 0- 6 0	Daffodils, various, per dozen ...	4 0- 6 0
Araucaria excelsa, per dozen ...	18 0-30 0	Deutzia gracilis, per dozen ...	8 0-10 0
Aspidistras, green, per doz. ...	18 0-24 0	Ericas, per doz....	15 0-24 0
— variegated, per doz. ...	30 0-42 0	Euonymus, dozen	4 0- 9 0
Azalea indica, p. doz.	15 0-30 0	Ferns, in thumbs, per 100... ...	8 0-12 0
— mollis, p. doz.	24 0-42 0	— in 48's, p. doz.	4 0-10 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	— in 32's, p. doz.	9 0-18 0
— Sprengeri, doz.	8 0-12 0	Ficus elastica, p. doz.	9 0-12 0
— tenuissimus per doz. ...	8 0-10 0	— repens, p. doz.	6 0- 9 0
Begonia Gloire de Lorraine, doz.	12 0-18 0	Genistas, per doz.	6 0-10 0
Boronia megastigma, per dozen	12 0-24 0	Hyacinths (3 in a pot), per doz.	6 0- 9 0
— heterophylla.	18 0-24 0	Hydrangea, Thos. Hogg, per. doz.	9 0 —
Calla æthiopica, per doz. ...	5 0- 6 0	Kentia Belmoreana, per doz,...	12 0-18 0
Cinerarias, per dozen	6 0-10 0	— Fosteriana, p. doz.	12 0-21 0
Crotons, per doz.	12 0-30 0	Latania borbonica, per doz. ...	9 0-15 0
Cocos Weddelliana, per doz. ...	18 0-30 0	Marguerites, doz.	9 0-10 0
Cyclamen persicum, per doz.	9 0-18 0	Mignonette, per dozen	9 0-10 0
Cyperus alternifolius, p. doz.	3 0- 5 0	Primula sinensis, per doz. ...	4 0- 6 0
		— obconica, per dozen ...	3 0- 5 0
		Spiræa japonica, per doz. ...	8 0-12 0
		Tulips, in boxes, each	1 6- 2 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Asparagus plumosus, long trails, each ...	0 9- 1 0	Galax leaves (American), per dozen bunches.	2 6 —
— — medium, each ...	0 4- 0 6	Ivy-leaves, bronze	1 6- 2 0
— — short sprays per bunch...	1 0- 2 6	— long trails, per bundle ...	1 0- 2 0
— Sprengeri ...	0 9- 1 6	— short green, per dozen bunches ...	1 0- 1 6
— tenuissimus..	0 9- 1 0	Myrtle, doz. bun.	3 0- 4 0
Adiantum cuneatum, doz. bun.	6 0- 9 0	Smilax, p. dozen trails	4 0- 6 0
Croton leaves, doz.	1 0- 2 0	Hardy foliage (various), per dozen bunches	3 0- 6 0
Cycas leaves, each	1 0- 1 6		
Fern, English, p. dozen bunches	3 0- 4 0		

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Anemones, p. doz. bunches, pink	2 0- 3 0	Marguerites, per doz. bunches.	2 0- 3 0
— fulgens ...	3 0- 4 0	Mimosa (Acacia), per basket ...	6 0- 8 0
Carnations, per doz. bunches.	9 0-12 0	Narcissus, per basket... ...	4 0- 8 0
Fern, French (Asplenium adiantum nigrum), p. doz. bunches ...	6 0 —	Ranunculus, per doz. bunches.	9 0-12 0
Freesias, dz. bchs.	2 0- 4 0	Violets, blue, per doz. bunches.	1 0- 2 0
Lilac, per bunch.	2 6- 3 6	— Parma, per large bunch...	2 6- 3 6

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Azalea Fielderi, per doz. bun..	2 6- 3 0	Lilium longiflorum ...	4 0- 5 0
— mollis, per dz. bunches ...	9 0-12 0	— tigrinum ...	2 0- 2 6
Calla æthiopica, per doz. blooms	3 0- 4 0	Lily of the Valley, per dozen bun..	8 0-18 0
Camellias, per dz. blooms	1 6- 2 0	Marguerites, per doz. bunches, white	3 0- 4 0
Carnations, p. dz. blooms, best American vars.	2 6- 5 0	— yellow... ...	3 0- 5 0
— smaller do. ...	1 0- 2 0	Narcissus, p. doz. bunches, gloriosus	1 6- 2 6
Cattleya, per doz. blooms	10 0-12 0	— paper - white	1 6- 2 6
Cypripedium insigne, per doz. blooms	2 6- 3 6	— Pheasant's Eye	2 0- 3 0
Daffodils, per dz. bunch., single yellow ...	2 0- 5 0	— Soleil d'Or ...	1 6- 2 0
— double ...	3 0- 5 0	Odontoglossum crispum, pr. dz. blooms	2 0- 3 0
— Emperor ...	4 0- 6 0	Pelargoniums, p. doz. bnchs.	
— Golden Spur	3 0- 5 0	— (Zonal) double scarlet ...	3 0- 6 0
— Henry Irving	5 0- 6 0	— salmon and pink	4 0- 6 0
— princeps ..	3 0- 4 0	Roses, per dozen blooms, Niphetos, ...	2 0- 3 0
— Sir Watkin ...	3 0- 5 0	— Bridesmaid ...	4 0- 6 0
Dendrobium nobile, doz. blooms	2 6- 3 0	— Kaiserin A. Victoria ...	5 0- 6 0
Eucharis grandiflora, per dozen blooms	2 0- 3 0	— General Jacqueminot ...	2 0- 4 0
Euphorbia jacquiniæflora, bunch	1 6- 2 6	— C. Mermet ...	4 0- 6 0
Gardenias, per dz. blooms	1 6- 2 0	— Liberty ...	4 0- 6 0
Hyacinths, Roman, per doz. bun. ...	6 0- 8 0	— Sunrise ...	3 0- 4 0
Iris Germanica, p. bunch	1 0 —	Tuberoses, on stems, per dozen blooms	0 3- 0 6
Lilac (English forced), per bun.	2 0- 3 0	Tulips, doz. bun.	6 0-12 0
Liliums, p. bunch, lancifolium, rubrum and album... ...	2 6- 3 6	— special double varieties ...	18 0-24 0
		Violets, blue, English, per dz. bunches... ...	1 6- 3 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Artichokes, Globe, per dozen ...	3 0- 3 6	Mint, per dozen...	3 0- 5 0
— Jerusalem, p. sieve	1 0 —	Leeks, doz. bndls.	1 6 2 0
Asparagus, bunch	5 0 —	Lettuces, Cabbage, per dozen ...	1 3 —
— Giant	20 0-30 0	Mushrooms (house) per lb.... ...	0 9- 1 0
— Paris Green...	4 6 —	Onions, pickling, per sieve ...	5 0- 6 0
— Spanish, bunch	2 0 —	— English, cwt.	15 6-17 0
— Sprue, p. doz.	10 0 —	— Dutch, p. bag.	12 0-14 6
Beans, dwf., p. lb.	1 2- 1 4	— Valencia, per case	15 6 —
— Madeira, per basket... ...	3 0- 3 6	Parsley, 12 bunch.	2 0- 2 6
Beetroot, bushel	1 6 —	Parsnips, per bag	3 0- 3 6
Broccoli, Sprouting, bag... ...	1 6- 2 0	Peas, French, pkt.	1 8 —
Brussels-Sprouts, sieve	1 0- 1 6	Potatos, per ton	50 0-90 0
Cabbages, p. bag	1 6- 2 0	— Frame, lb. ...	0 6- 0 7
Carrots, 12 bunch.	2 0 —	— Teneriffe, cwt.	10 0-18 0
— bag	2 3- 3 6	Radishes, 12 bnch.	0 7 -2 0
Cauliflowers, doz.	1 0- 2 0	Rhubarb, York, per dozen ...	0 9- 1 0
— Cherbourg dz.	1 0- 1 6	Salad, small punnets, per doz	0 9 —
— St. Malo, doz.	1 6- 2 0	Savoys, per tally	4 0- 5 0
Celeriac, per doz.	3 0 —	Seakale, per doz.	10 0-13 0
Celery, per dozen bunches... ...	6 0-12 0	Shallots, p. sieve	5 0 —
Cress, doz. pun.	0 9 —	Spinach, bush. ..	2 6- 3 0
Cucumbers, doz.	3 6- 5 0	Tomatos, bundle	7 0-12 0
Curled Kale, bush.	1 0 —	— English, p. lb.	1 3 —
Endive, per doz.	2 0 —	Turnips per doz.	1 6 —
Garlic, per lb. ...	0 3- 0 4	— per bag ...	1 6- 2 0
Greens, bushel ...	1 0 —	Turnip-tops, bag	1 6 2 0
Horseradish, foreign, p. bunch	0 8- 0 9	Watercress, per doz. bunches.	0 6 0 7

Fruit: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Apples, bushel ...	2 0- 7 0	Grapes, Gros Colmar, per lb.	1 9- 3 0
— English, sieve or half bushel	1 6- 3 0	— Alicante. per lb.	2 0- 3 0
— — per barrel.	12 0-20 0	— Almeria, doz. lb.	4 0- 8 0
— Newtown Pippin ...	55 0 —	Lemons, per case	8 0-24 0
— — per case ...	20 0-25 0	Oranges, per case	8 0-50 0
Bananas, bunch .	7 0-11 0	— Blood	7 0-14 6
— loose, dozen	1 0- 1 6	— Navel	13 0-15 0
Chestnuts, p. bag	14 0 —	— Jaffa, per box	15 0-16 0
Cobnuts, per lb. .	0 6½ —	— Seville ...	6 0- 6 6
Cranberries, box	13 0 —	Pears, per case ...	17 6 —
Custard - Apples, per dozen ...	5 0-10 0	Pines, each ...	2 0- 4 0
Figs, per dozen...	24 0 —	Strawberries, A., per lb.	5 0- 8 0
Grape - Fruit, per case	15 0-16 0	— — B., per lb...	2 0- 4 0

POTATOS.

Dunbars, 80*s*. to 90*s*.; various, home-grown, 55*s*. to 75*s*. per ton; seed in variety. *John Bath*, 32 & 34, *Wellington Street, Covent Garden.*

REMARKS.—The Figs quoted above are from Guernsey. There are still supplies of Apples; Bramley's Seedling, 6*s*. to 8*s*. per bushel; Wellingtons, 5*s*. to 7*s*., do.; Norfolk Beefings, 4*s*. to 5*s*., do.; Custard Apples, 5*s*. to 10*s*. per doz. Cape fruit per case: Plums, 5*s*. to 8*s*.; Peaches, 8*s*. to 10*s*; Nectarines, 7*s*. to 10*s*.; Pears, 4*s*. to 6*s*. Grapes (white and black), 15*s*. to 20*s*. per case. The black variety commands the better prices. Strawberries are now more plentiful. The market is now receiving consignments of Egyptian Onions; these realise from 13*s*. 6*d*. to 14*s*. per cwt.

FRUITS AND VEGETABLES.

GLASGOW, *March* 15.—The following are the averages of the prices during the past week:—Apples, American, 15*s*. to 25*s*. per barrel; do., Canadian, 15*s*. to 30*s*. do.; Oranges, ordinary 420's, 10*s*. to 14*s*. per case; do., large. 11*s*. to 15*s*. do.; do., extra large, 16*s*. to 20*s*. do.: do., large 714's, 12*s*. to 14*s*. do.; Lemons 8*s*. to 15*s*. per case; Bananas, 6*s*. to 11*s*. per bunch; Grapes, 1*s*. 6*d*. to 3*s*. 6*d*. per lb.; Tomatos, 3*s*. to 5*s*. per box; Mushrooms, 1*s*. to 1*s*. 3*d*. per lb.; Onions. 4's, 12*s*. to 13*s*. per case; do., 5's, 14*s*. to 16*s*. do.

LIVERPOOL, *March* 15. — *Wholesale Vegetable Market* (*North Hay*).—The following are the averages of the current prices during the past week—prices varying according to supply:—Vegetables: Potatos, Bruce, 2*s*. to 2*s*. 4*d*. per cwt.; Main Crop, 2*s*. 9*d*. to 3*s*. 6*d*.; Up-to-Date, 1*s*. 9*d*. to 2*s*. 2*d*.; Turnips, 6*d*. to 8*d*. per dozen bunches; Swedes, 1*s*. to 1*s*. 2*d*. per cwt.; Carrots, 3*s*. to 3*s*. 6*d*. per cwt.; Onions, foreign, 10*s*. to 12*s*. per bag; Parsley, 6*d*. to 8*d*. per dozen bunches; Cauliflowers, 1*s*. 6*d*. to 2*s*. 6*d*. per dozen; Cabbages, 4*d*. to 8*d*. do.; Celery, 8*d*. to 1*s*. do.—Fruit: Oranges, Jaffa, 8*s*. to 12*s*. 6*d*. per box; Valencia, 10*s*. to 20*s*. per case; Palermo, 7*s*. to 10*s*. 6*d*. do.; bitters, 3*s*. to 6*s*. do.; Apples, American, 10*s*. to 17*s*. per barrel; Canadian, 16*s*. to 21*s*. do.; Lemons, Palermo, 6*s*. to 11*s*. per case. *St. John's*.—Potatos, 10*d*. to 1*s*. per peck: Cucumbers, 6*d*. to 10*d*. each; Filberts, 10*d*. per lb.; Grapes, English, 1*s*. 6*d*. to 2*s*. 6*d*. per lb.; do, foreign, 6*d*. to 8*d*. per lb.; Pine-apples, foreign, 2*s*. 6*d*. to 3*s*. 6*d*. each; Mushrooms, 1*s*. to 1*s* 3*d*. per lb. *Birkenhead*.—Potatos, 8*d*. to 10*d*. per peck; new, 1½*d*. to 3*d*. per lb.; Celery, 1½*d*. to 3*d*. per stick; Cucumbers, 6*d*. to 8*d*. each; Tomatos, 4*d*. to 6*d*. per lb.; Grapes, English, 2*s*. to 3*s*. per lb.; foreign, 8*d*. to 10*d*. do.; Apples, 2*d*. to 3*d*. per lb.; Mushrooms, 1*s*. to 1*s*. 2*d*. do.; Pine-apples, foreign, 6*d*. to 5*s*. each; Brazil nuts, 6*d*. to 8*d*. per lb.

COVENT GARDEN FLOWER MARKET.

Cyclamen continue plentiful, and good in quality; some of the best plants in 48's have realised as much as 18*s*. per dozen. Cinerarias are also of good quality, but prices for these vary considerably; many are cleared at very low prices. Supplies of Genistas and Marguerites are over plentiful, but these will be needed shortly in larger quantities for use in window-boxes. Daffodils are plentiful, and many remain unsold at closing time. There are good Rhododendrons, Azalea mollis, Prunus triloba, Laburnums, and Lilacs in pots, but they do not appear to be much in demand. Erica Wilmoreana and E. Cavendishi are obtainable in well-flowered plants; E. persoluta and a few plants of E. melanthera are still seen. Boronias are good. Acacias are not quite so plentiful. Callas realise low prices. Lily of the Valley in pots may be had with good foliage. Hydrangea Thomas Hogg in dwarf but well-flowered plants is noticed. Supplies of Begonia Gloire de Lorraine still hold out. Ferns, Palms, and other foliage plants are plentiful, but meet a very slow demand. There is now a better trade in hardy flower roots. Pansies, Polyanthus, Auriculas, and Daisies in flower are seen, and with a few days' continuance of mild weather the market will be receiving large supplies of these flowers. Spring-bedding plants in store boxes are arriving, they include Fuchsias, zonal Pelargoniums, Lobelias, Marguerites, &c. They do not move freely at present.

CUT FLOWERS.

Supplies are very large, especially those from France, Guernsey, Jersey, and the Scilly Islands. These somewhat affect the trade in home-grown produce. Anemones are showy; the St. Brigid, coronaria, fulgens, and the double pink varieties are all abundant. The double crimson and the yellow Ranunculus are good. Violets are plentiful; English-grown flowers of the variety Princess of Wales are very fine. Roses are now over abundant. La France is still one of the best pink varieties, and is marketed in large quantities. Liberty in point of colour is much before General Jacqueminot; the latter fades quickly, but Liberty keeps its colour well for a long time. Marquise de Litta is a good red variety. Captain Hayward is decidedly one of the best varieties for market purposes, although there are few blooms of this in the market. Carnations are cheaper. Winter Cheer is very bright in appearance, but the blooms are small. Madame Thérèse Franco (pink). Uriah Pike (a good sweet-scented crimson), the American varieties Norway (pure white), Alpine Glow (blush), Fair Maid (a deeper shade than Enchantress), and Floriana (pink), are all worthy the attention of growers. The variety Mrs. T. W. Lawson seems likely to hold its own as the best of its colour. Gardenias are now plentiful. Supplies of Lily of the Valley are again overdone. Lilium longiflorum has gone down in price, but it is not over-plentiful; a few good L. auratum are seen. Tuberoses are seen again. The market is flooded with Daffodils of all sorts. Zonal Pelargonium "Raspail" and varieties in other colours, are plentiful, and sell cheaply. Azalea mollis does not sell readily. Tulips are now over-plentiful; in fact, there are few subjects that are wholly cleared at closing time. *A. H., Covent Garden, Wednesday, March* 15.

GARDENING APPOINTMENTS.

Mr. C. C. Chapelow, from the Horticultural College, Swanley, as Gardener in the Glass and Vegetable Department at the South-Eastern Agricultural College, Wye, Kent.

Mr. C. W. Muir, until recently at the Tweed Vineyards, Clovenfords, N.B., as Departmental Foreman at the Horticultural College, Swanley, Kent.

Mr. John Reach, The Royal Nurseries, Craigmillar, Edinburgh, as Gardener to The Rt. Hon. Lord Polwarth, Mertoun, St. Boswells.

Mr. James Brown, Foreman at Dunmore Park, Stirlingshire, as Gardener to The Most Hon. The Marchioness of Bute, Abbotsford, Melrose.

Mr. R. Harding, for the past five and a half years Gardener to T. Martin, Esq., Treverbyne, Plympton, as Gardener to Mrs. Hibbert, Broadgate, Barnstaple, N. Devon.

Mr. Henry Henderson, for the last ten years Gardener at Cromarty House, Cromarty, N.B., as Gardener and Overseer to F. R. S. Balfour, Esq., of Dawyck, Peeblesshire.

Mr. A. L Knight, for the past nine years as Gardener and Bailiff to Rowland Brown, Esq., Oxhey Grove, Harrow Weald, Middlesex, as Gardener to Captain W. H. Dawson, Ravensdale, Tunbridge Wells, Kent.

Mr. C, Cox, for the past four years General Foreman at Ashridge Park, Berkhamsted, as Gardener to C. T. H. Tower, Esq., Weald Hall, Brentwood, Essex.

ANSWERS TO CORRESPONDENTS.

⁂ **Editor and Publisher.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Books: *H. J.* We do not know of a work which deals with the subject you mention, with the exception of *Mushrooms for the Million*, by John Wright. This book, which is out of print, may sometimes be obtained from the second-hand booksellers.

Carnation, Oeillet Remontant Lyonnais à Tige de Fer: *Dianthus*. You cannot do better than apply to the grower you mention, and he will get you this variety, if it is obtainable. The significance of the French name is that the variety is a perpetual-flowering variety, and has strong, stiff flower stems (tige de fer—stem of iron).

Cucumber and other Plants: *T. C. H.* The diseased appearance of your plants is not due to fungus disease, but the leaves are literally smothered with insect pests. We can detect thrip, scale, greenfly, and red-spider. Adopt measures against these at once by fumigating and spraying with insecticides. The appearance of the Richardia leaves and flower is due to inappropriate culture. Have the plants been watered carefully?

Economic Plants: *Constant Reader*. Apply to Messrs. Wm. Bull & Sons, Nurserymen, Chelsea.

Garden Pots: *S. S., Ealing*. If you have only the small unheated conservatory mentioned in your letter, the large number of small and medium-sized pots will be of little use to you. The use for pots is for containing desirable plants, and the opposite view of selecting plants for the pots is a less familar one to us. In respect to the conservatory facing to the north, the Ferns now cultivated are the most suitable plants for the structure, but Orange-trees, Ficus elastica, Aspidistra, Araucarias, &c., would also succeed. If you wish to have flowering plants as well, they will require to be grown in frames and removed to the conservatory when they reach the flowering stage. If you can have such frames erected, a use will soon be forthcoming for the pots.

Insects: *G. C.* The mass of minute dark-coloured insects are the so-called spring-tails or ground fleas, Colembola sp. They are often found swarming round newly-made hot-beds, decayed vegetable matter, garden paths, &c., and have been known to attack fungi and the leaves of the Mangold and Potato. Occasionally they have been recorded as injurious, but as a rule they are not so. You can easily destroy them when on the ground with a solution of caustic alkali applied hot. (2) The large, active, grub-like insect is the larva of a beetle belonging to the Brachyletrous beetles. It is apparently of predaceous habits and also a cannibal, as it has during its captivity devoured two members of its own family. Such larvæ are also found in decayed vegetable matter and fungi, but are not known to be destructive to the produce of the garden or the field.

Land Waiting for Use: *C. P.* You might plant Potatos again and get a good and profitable crop this season; or you could sow Clover and other seeds, which if sown at once would furnish a crop after autumn-sown Clover is past, and the ground could be ploughed later on, when the turned-in Clover would benefit the soil considerably.

Names of Fruits: *W. F. S.* Apple Red Norman.

Names of Plants: *Slough* (no name enclosed). 1, Thuya occidentalis variety; 2, Cupressus Lawsoniana aurea; 3, Daphne Laureola (Spurge Laurel).—*J. C.* Primordial (Retinospora) stage and adult forms of Cupressus funebris.—*Strix*. You should number your specimens. The creeper is Nepeta glechoma variegata; the plant in flower is Abutilon megapotamicum; the stove plant is Ruellia Portellæ, and the Fern Polystichum angulare proliferum.—*Hop*. 1, Oncidium maculatum; 2, O. tetrapetalum; 3, Dendrobium tetragonum; 4, Miltonia flavescens.—*V. R. A.* 1, Masdevallia Wendlandiana; 2, M. triaristella; 3, Oncidium triquetrum.—*W. C. S.* Cattleya Percivaliana.—*B. T.* 1, Adiantum formosum; 2, Epidendrum radiatum; 3, Restrepia maculata.—*F. J. R.* Cœlogyne lactea.—*W. U.* Ruellia macrantha.

Orange-tree: *W. H. W.* Unless the plant is in an unhealthy condition or much pot-bound, it will be better to afford a top-dressing now and remove the plant to a tub during next winter, when growth will be less active than it is at this date. If you decide to top-dress the plant, you may remove as much of the surface soil as can be done without injuring the roots, and then apply a compost of rich fibrous loam and leaf-mould in equal quantities, with a little charcoal added. If the circumstances make it desirable to shift the plant at once, be careful not to place it in too large a tub, but one that will afford space for 1 inch or 1½ inch of fresh soil around the old "ball." Use a similar compost as advised for the top-dressing, adding some crushed bones, and keep the collar of the plant above the surface soil, as Orange-trees seldom succeed if planted deeply. Do not disturb the roots more than is necessary, and following the operation spray the plant overhead with water on fine days.

Pagoscope: *D. W. S.*, and others. We have no further information to give you beyond what we have already published. We have done our part. It is for the advertisers to do theirs.

Pelargonium Unhealthy: *Strix*. The small plant has had its stem buried much too deeply. No plant should be buried below the "collar," or the point at which roots are emitted, whether in a pot or in the open ground. The old stump should have been destroyed long ago. There is no use in keeping such old plants when better and healthier plants may be easily obtained by propagation from cuttings.

Petrified Mushroom: *W. F. R.* Without seeing your specimens we cannot say what it is, but we suspect it is a fossil Echinus or something of the kind, and not a Mushroom at all.

Plants for a Border Facing to the North: *Amateur Gardener*. You have omitted to state the length and width of the border, but these matters are important when selecting the plants. We give you a selection of plants and state their approximate height, and the predominant colour of the flowers that you may be guided in arranging them. *First set* (plants 3 ft. or more high).—Aconitum napellus grandiflorum (blue), A. Wilsoni (blue), Anchusa italica (blue), Anemone japonica in white and pink varieties; Aquilegia chrysantha (yellow), Campanula lactiflora cœrulea (pale blue), Delphiniums in variety (blue and violet or purplish shades), Echinops ruthenicus (blue), E. sphærocephalus (white), Eremurus robustus (pink), Helenicum grandicephalum, H. autumnale grandiflorum (yellow), H. nudiflorum (orange and crimson), Kniphofia aloides (orange-red), Lathyrus latifolius (rose), L. l. albus (white), Lupinus polyphyllus (blue), L. p. albus (white), Helianthus mollis, H. tomentosus, H. multiflorus pl., H. m. grandiflorus (all yellow shades), Spiræa aruncus (cream), Thalictrum flavum (yellow), Aster cordifolius, A. c. elegans (lilac and white), A. novæ-angliæ rubra (red), A. n. a Mrs. Rayner (crimson), A. n. a. W. Bowman (purplish-blue), A. novæ-belgii Topsawyer (blue), A. n. b. St. Brigid (rose), A. n. b. Charming (white and purple), *Second set* (plants 2 feet to 3 feet high).—Stenactis speciosa (blue), Spiræa venusta (pink), Campanula grandis (blue), C. g. alba (white), C. persicifolia coronata alba, C. p. fl.-pl., C. p. Mœrheimii (all white), herbaceous Phloxes in white, scarlet, crimson, and rose shades; Oriental Poppies in scarlet and crimson; Incarvillea Delavayi (rosy-carmine), Scabiosa caucasica (blue), Iris aurea, I. Monnieri (both yellow), I. Monspur (blue), I. missouriensis (pale blue), I. pallida (blue), I. Madame Chercau (blue and white), I. Dr. Bernice (crimson and brown), I. l'Innocence (white), I. Queen of May (rose), I. Kæmpferi in rose, blue, and other shades; single and double Pyrethrums in many bright hues, Gaillardias (crimson and gold), Montbretias in orange and yellow, Monarda didyma (crimson-scarlet). *Third set* (plants not more than 2 feet high).—Aster Amellus, A. A. bessarabicus, A. A. Riverslea (all violet-blue), Inula glandulosa (golden-coloured), Megasea cordifolia purpurea (crimson-purple), Campanula carpatica (blue), C. c. alba (white), C. speciosa dahurica (blue), Hemerocallis Thunbergi (yellow), Helenium pumilum (yellow), Lychnis viscaria plena (rose), Lenten and Christmas Roses, Funkias, Doronicums, Anemone sylvestris (white). Heucheras in variety, &c. In addition to the above you could employ as marginal plants any of the alpine or setaceous Phloxes, Aubrietias, such Campanulas as muralis, pumila, garganica; any of the dwarf Achilleas, Hepaticas, Iris pumila in variety, Dactylis, double Arabis, Cheiranthus alpinus, Gentiana acaulis, &c. In the arrangement of the border you will secure a finer display by setting out a selection of the plants given in groups of from 2 to 4 feet across at ground level. That is to say, group several strong plants of each sort together on ground spaces of about 3 feet across. While thus securing a mass of colour from any one subject, the general arrangement will be also bolder and more effective when seen in the distance. At another season Pæonies and many bulbous plants could be planted to enhance the effect. Groups of Lilium tigrinum and L. speciosum in variety could be planted even now in the second set.

Violets Diseased: *J. W.* Your plants are attacked by a fungus, Ascochyta violæ. Spray the plants every fortnight with potassium sulphide in the proportion of 1 oz. of sulphide to 3 gallons of water. Select a fresh situation and soil for a future plantation, getting new stock from a locality that is free from the disease.

White Deposit on Soil: *A. G.* The whitish appearance of the surface soil on your Peach border is due to a deposit of lime, &c., from the water, which is evidently of hard nature in your neighbourhood. The sample of soil you forward appears to us to be of very inferior quality.

Communications Received.—Manager, South Africa—Prof. Mayr, Munich—J. D.—E. Benary, Erfurt—J. R., Menabilly—Royal Society—Elliot Stock—Dr. Treub, Buitenzorg—Rev. E. N. Ridley—Department of Agriculture, Washington—E. T. C.—Horticultural College, Swanley—T. Nelson & Sons—Greenwood Pim—J. C. T.—H. H., Cromarty—E. Webb & Sons—Messrs. Landreth, Philapelphia—Otto Stapf—L. G., Brussels—A. (next week)—J. Dale (next week)—J. F. R. (not suitable)—J. L.—R. N.—A. C., Nivelles—H. J.—Sec., R. B. Soc.—F. F.—I. J. E.—G. H. H.—J. G.—Leeman—T. H., Edgbaston—H. Y—F. J.—F. M.—A. C. N., Perthshire—C. M.—J. C.—S. R.—J. M. A.—Grimsby—F. R.—A. P. B. (thanks for Cyclamen flowers)—E. W. & Sons (thanks for Cyclamen flowers)—A.—J. O. W.—E. M.—E. J. R.—Sec., R.H S.—J. T., Northwich—R. D.—J. O'B.—J. D.—R. P.—W. M.—H. W. W.—Chloris—J. F. D.—A. C. F.—J. S. T.—W. W.—W. H.—G. Cheal.

(For Weather see p. xviii.)

THE
Gardeners' Chronicle

No. 952.—*SATURDAY, March* 25, 1905.

CONTENTS.

Adonis amurensis ... 188
Alpine garden, the ... 189
Apiary, the 187
Azalea indica "Hexe" 185
Beech-coccus, the ... 185
Belvedere, St. Lawrence, Isle of Wight. 181
Bulb-mite, the 185
Cantua buxifolia ... 189
Ceanothus thyrsiflorus 178
Cryptomeria japonica, large specimens of... 189
Cucumber "spot" disease, the ... 185, 188
Eckford testimonial, the 185
Florist's flowers, degeneration of ... 184
Grapes, well-preserved 185
Horticulture, examinations in 185
Law note—
  Leeman *v.* Linden ... 187
Liège Exhibition and Conference 186
Newstead, Mr. Robert. 189
Orchids at Walton Grange... 180
Oversea supplies for February 187
Obituary—
  Macrae, Farquhar ... 189
  Sanders, Edward A. 189
Plants new or noteworthy—
  Caltha elata 178
  Heloniopsis breviscapa... 178
Potatos ... ... 17[illegible], 185
Rainfall and the Wheat crop 185
Rhododendrons, Himalayan 189
Seeds sown at Egyptian burials 186
Shrubs for the Midland-Counties ... 192
Societies—
  Dutch Bulb Growers 190
  Gardeners' Association, the British ... 190
  Gardeners' Debating 190
  Royal Botanic ... 190
  Royal Horticultural 185
  Scientific Committee 189
Swanley Horticultural College... ... 185
Timber value of exotic trees, the 177
Turf-cutting machine, a 191
Week's work, the ... 182

ILLUSTRATIONS.

Adonis amurensis 188
Brunsvigia gigantea flowering in the open at Belvedere, I W. (Supplementary Illustration)
Brunsvigia Josephinæ 186
Ceanothus thyrsiflorus flowering against a wall in Kew Gardens 179
Ceanothus thyrsiflorus, a flowering spray of ... 179
Heloniopsis breviscapa, a new Japanese species ... 178
Larva of the queen bee enclosed in a queen cell ... 187
Newstead, Robert, portrait of 189
Optimus turf-cutter, the 191
View of a portion of the rockery at Belvedere, St. Lawrence, I.W. 181

THE TIMBER VALUE OF EXOTIC TREES.

RECORDS of growth made by various introduced species are given from time to time in the *Gardeners' Chronicle* and elsewhere. Although it does not necessarily follow that these are recorded with any other motive than that of supplying interesting information, yet when any species has made an exceptionally rapid growth it is not unusual for a suggestion to be offered that it will probably prove of value as a timber producer. Such suggestions are, of course, made in good faith, but they seldom emanate from anyone who has any connection or acquaintance with the timber trade of this country, for the simple reason that the timber trade is an industry, while the growing of most exotic species is more or less of a hobby.

Yet it is evident that the constant recommendation of a particular species, even when made by men making no pretence to possess expert forestry knowledge, has a tendency to bring that species to public notice, and may eventually lead to its cultivation on a scale which exceeds the limits of what may be termed "ornamental planting." To a planter who neither requires nor desires to study economy in planting or the home timber supply of the future, the question is not perhaps of great importance, but there are doubtless others who plant with a laudable desire to lay their money out to advantage and confer some benefit upon posterity, and to such the discovery of an apparently valuable species is seldom allowed to pass unnoticed.

No doubt, rapid growth of itself is always an attractive feature in any species, and very few of our indigenous species possess that feature in early youth, the period during which so many exotic trees show to advantage. When, therefore, attention is frequently drawn to a comparatively new but rapidly-growing tree, it is not unusual to find those who value that quality introducing it into their woods and plantations with a view of increasing their value and rate of production. While such a step may be justifiable in some cases, there is little doubt that it has led, and will again lead, to a waste of time and money in others. It is always instructive, and occasionally amusing, to sum up now and again the various species which have been announced as valuable for forestry purposes.

It must not, however, be supposed that the laudation of new species is an innovation. The love of novelty is a human weakness, and is not confined to any particular calling. In 1825 William Cobbett, of Rural Ride fame, wrote the praises of the Locust-tree (Robinia pseudo-Acacia) in the following words:—

"I, like all other planters, was in haste. The nakedness of my house called for shelter. I bought large trees, carried them to Botley at great expense, planted them; but by degrees I pulled them all up and flung them away, except a row of them placed against a dead wall merely as a screen. The plantation is, taken altogether, the most beautiful that I ever saw. It consists in part of my Locust-trees, planted in the three years before mentioned, and of these I am now going to give an account. This account will be read hundreds of years hence. The time will come (and it will not be very distant) when the Locust-tree will be more common in England than the Oak; when a man would be thought mad if he used anything but Locust in the making of sills, posts, gates, joists, feet for rick-stands, stocks and axle-trees for wheels, hop-poles, pales, or for anything where there is liability to rot. This time will not be distant, seeing that the Locust grows so fast. The next race of children but one—that is to say, those who will be born sixty years hence—will think that Locust-trees have always been the most numerous trees in England; and some curious writer of a century or two hence will tell his readers that, wonderful as it may seem, 'the Locust was hardly known in England until about the year 1823, when the nation was introduced to a knowledge of it by William Cobbett.' What he will say of me besides I do not know, but I know that he will say this of me. I enter upon this account, therefore, knowing that I am writing for centuries and centuries to come."

One of the "hundreds of years hence" has almost passed, and the Locust has not become so common as the Oak, the men who plant anything else are not thought mad, nor does the nation talk much of William Cobbett's arboricultural introduction. His fate is pathetic; but it is only the common one of most forestry reformers. The thorough trial of a new species is a long business, and requires the experience of more than one man to bring it to a successful issue. Since 1825 many trees have been recommended almost as highly as was the Locust tree by COBBETT, but only to be forgotten again in the course of a few years. Conifers in particular might be named by the dozen which were going to revolutionise English forestry, and make two feet of timber grow where one grew before. Yet when planted outside the shelter of the pinetum or ornamental woodland they were seldom heard of except through the record of their failure. Some failed to thrive except on particular soils or situations, others practically stood still after a few years' rapid growth, while a third class were found to be almost useless as timber when they reached maturity. The few real successes might be counted on the fingers of one hand; the few which have stopped short of complete failure on the fingers of the other. The reason is difficult to see in many cases, especially when a success and a failure have the same country of origin. Take, for instance, two such species as the Douglas Fir and Thuya gigantea. The former develops into a splendid timber tree in this country, while the latter cannot be considered of more than arboricultural interest, although both are known as good timber trees in Western America. Or, again, take the Wellingtonia or Sequoia gigantea and its near relative S. sempervirens. Where can one see a really good specimen of a timber tree amongst the former in this country? Trees of large diameter at ground level are common enough, but at twenty feet from the ground they are little more than poles. S. sempervirens, on the other hand, grows into a well-shaped bole, and carries its girth well up, producing trees with a large volume of timber, although too soft to be of much value. Numerous instances of a similar nature could be given, showing how one species turns out well, and another badly, although both may do equally well for a time.

No doubt many causes contribute to these apparent anomalies. Fickle springs, cold summers, and wet autumns, may all aid in exerting their influence unfavourably upon the development of certain exotic species, while they have little effect upon others. But the chief factor in converting a normally tall tree into a comparatively dwarf one must probably be sought in our relatively cold and sunless summers, which check height growth after the first vigour of youth is over. Very few of our exotic trees, apart from European species, add much to their height after the first fifty years, and the majority of them fall off quickly before then. This seems especially marked in the case of many North American and Japanese species, although amongst the former several notable exceptions may be found. But probably as great a defect, from a commercial point of view, in many of these trees is their badly-shaped boles. The Wellingtonia, Thuya, Cupressus, Cryptomeria, &c., all exhibit the same failing in this respect, being characterised by stems of comparatively great girth at the base, but which fall off quickly a few feet above the ground. The specimen of Cryptomeria at Dropmore measured by Mr. Page showed this feature in a marked degree. Compare such a stem with one of Scotch Pine, Spruce, or Silver Fir, and it will at once be seen how superior these latter are if given fair conditions of growth.

But the worst feature about the timber of most of these coniferous trees from abroad is its poor quality. Judging the timber of most of them on its merits, it cannot be said that it is superior, if it is even as good as that produced by European trees. If Pine timber be judged by comparing it with that of Spruce or Silver Fir, the only tree which comes out of the ordeal at all creditably is the Douglas Fir. No American Pine can surpass either the Scotch or Corsican Pines for quality of timber, nor can they equal the latter in rate of growth. The common Spruce is as good as any amongst the Piceas (Spruces), while the European Larch stands at the top of all coniferous timber that can be grown in this country. Owing to the liability of the latter to disease and its more or less uncertain growth, however, it has recently been regarded as a doubtful species, although good reasons against its continued use have not yet been given. That it has proved a failure in many cases is beyond doubt. That it will prove a failure in those about to be formed none can say with certainty, apart from soils which are known to be inimical to it. But although it has by no means been discarded by planters, there has been a tendency during the last few years to replace it by the Japanese species (Larix aptolepis), chiefly on account of the supposed immunity of the latter from fungoid disease and insect pests. As a matter of fact, however, the Japanese Larch is neither immune against the blister fungus nor the Larch aphis. The disease has been reported from several quarters, and Mr. Forbes tells us that he has found the fungus fairly common on the Japanese Larch growing in the experimental forest plots at Cockle Park, although the typical blister has not yet had time to appear. Many of the same species were also badly attacked by the Larch aphis last summer, which, if Mr. Massee's conclusions are correct, should alone predispose them to Larch blister.

Just as one swallow does not make a summer, so one diseased or aphis-infested Japanese Larch does not render that species a failure. But the fact that the European Larch showed the same freedom from disease for many years after it was introduced renders it worth while considering whether the new species is sufficiently superior to the old to make its extensive cultivation a profitable undertaking. Its rapid growth, to begin with, may be an advantage, or it may not. As yet we know little or nothing about the quality of its timber when grown in Britain, but it is well known that the European variety often grows too fast for the production of hard, durable timber, and the same cause may produce the same effect in both species. With rapid growth alone to recommend it, and the possibility that this growth may suddenly drop off after the first twenty or thirty years, without any guarantee as to quality of timber or freedom from disease, the planting of Japanese Larch for commercial purposes must be regarded as speculative an operation as the planting of nine-tenths of the trees introduced during the last hundred years, including Cobbett's Locust tree. Mr. Elwes, who has studied the Japanese Larch both in Japan and in this country, believes that it will not prove superior to the European variety in the long run, while the frequency with which it loses its leading shoot is a serious defect in an ordinary forest tree. In any case the wisest policy seems to be a waiting one, both in the case of this and many other exotic trees. *A. C. Forbes*

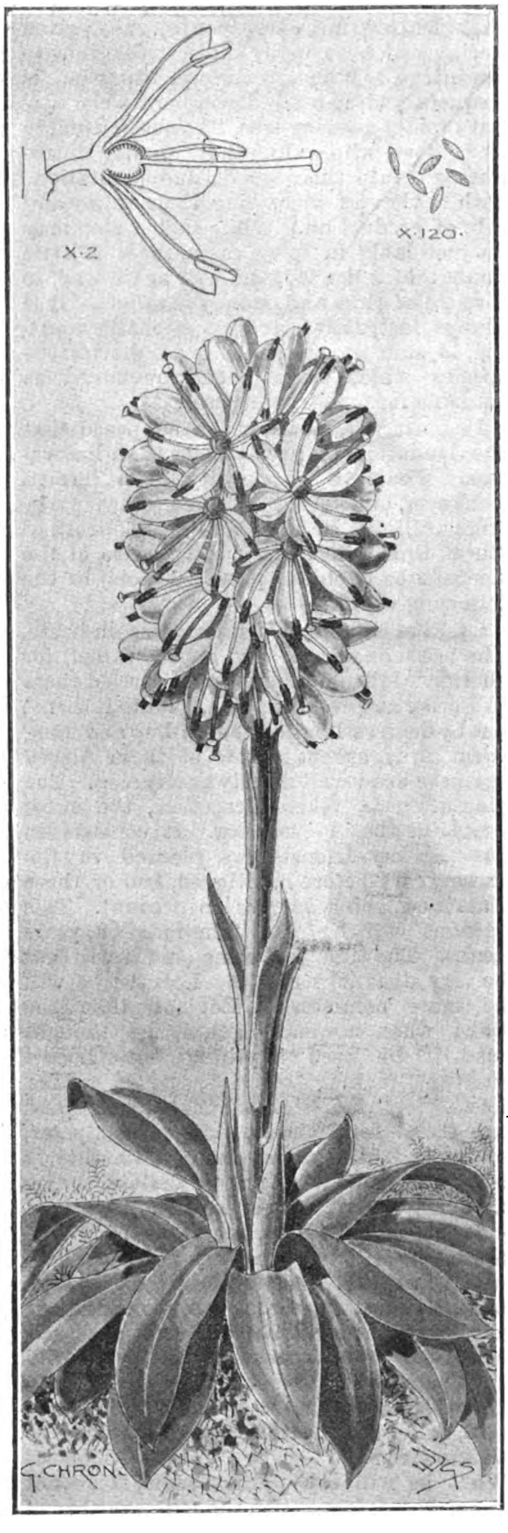


FIG. 70.—HELONIOPSIS BREVISCAPA

Entire plant; natural size.

Section through flower, magn. 2 diam.; pollen-grains elliptic, 1-furrowed, magn. 120 diam.

Recommended an Award of Merit at the last meeting of the Royal Horticultural Society.

NEW OR NOTEWORTHY PLANTS.

HELONIOPSIS BREVISCAPA.

THIS Japanese Liliaceous plant is so like the North American Helonias that at first sight it is not easy to distinguish them. The most easily recognised point of distinction is the single undivided style of the Japanese plant as compared with the three styles of the American one. Heloniopsis breviscapa, of which we give an illustration (fig. 70), from a specimen exhibited by Messrs. Barr, is a Squill-like plant, about 6 to 8 inches high, with a thick root-stock, broadly-lanceolate tufted leaves, and an erect, leafy stalked raceme of whitish or pale-lilac bell-shaped flowers, each about half-an-inch in length, supported by a pedicel rather shorter than itself. Perianth segments six equal, oblong-obovate, tapering to the base. Stamens slightly longer than the segments, connate at the extreme base with the segments filaments white, anthers two-lobed, innate, extrorse; ovary three-lobed, with a stout deep-violet-coloured style, capped by a cushion-like whitish stigma; ovules horizontal, very numerous. The plant is quite hardy, and is an interesting addition to our spring-flowering plants. H. japonica, a nearly-allied species, has nodding, loosely-flowered racemes, and was figured in the *Botanical Magazine*, t. 6986; and another species from Formosa (H. umbellata, Baker) is cited in the *Kew Hand-List* as in cultivation in that establishment. *M. T. M.*

CALTHA ELATA, *Duthie**.

A tall, handsome plant, similar in many respects to C. polypetala, Hochstetter, but the cylindrical petioles at once distinguish it from that species as well as from the common Marsh Marigold (C. palustris). It was raised in the Royal Gardens at Kew from seeds obtained by my plant collector in Hazára during 1899, and flowered in the rock garden last July. C. polypetala was also in flower at the same time. It agrees with the latter in the overlapping of the basal lobes of the leaves, but the leaves are more rounded and the marginal teeth are very acute; it also differs by having rather smaller flowers, more numerous stamens, and shorter stigmatic lobes; the follicles also are erect (not spreading), and their beaks are much shorter. It is a taller plant than C. palustris, and comes into flower considerably later. Some specimens in the Kew Herbarium, collected by Falconer in Hazára in 1837, and in W. Tibet in 1838, I think undoubtedly belong to this species. *J. F. Duthie, Kew.*

CEANOTHUS THYRSIFLORUS.

THE genus Ceanothus contains about thirty species of hardy or half-hardy shrubs, all of which are natives of North America. About twenty species have been introduced into cultivation in this country. The prevailing colour of the flowers is blue in its varied shades, but there are several species with pure white flowers, also several garden forms of C. azureus which have pinkish flowers.

The majority of the species are sufficiently hardy to withstand our winters if given the protection of a wall, a position for which they are admirably adapted, as may be readily seen by reference to the illustrations at figs. 71, 72. The species figured (C. thyrsiflorus) is a native of California, where it is known as the "Californian Lilac." It was introduced to British gardens in 1861, but does not appear to be at all well known; possibly this is due to the fact that it is not sufficiently hardy to stand the winter in the open without some slight protection. As previously mentioned, this is easily afforded by treating them as wall plants. When cultivated in this way they never fail to produce quantities of blossom during the early summer months. The flowers are produced on the ends of the branches of the previous year's growth, in dense compound panicles, and are of a lovely shade of lavender-blue colour. The leaves are variable in size and shape, being from 1 to 3 inches long and ½ to 1 inch in diameter. The species of Ceanothus thrive in almost any soil, but prefer a porous sandy loam, with good drainage. They are readily propagated in early autumn by cuttings of thin, half-ripened shoots cut to a joint, dried at the base and inserted in sand in a cold frame or bell-glass; or by layering the branches in spring. The majority of the species flower on the ripened shoots of the previous years' wood, for this reason any pruning which may be necessary should be done immediately after the flowering season is over, and the plants be encouraged to make a strong vigorous growth again ready for the following season's bloom.

---

* *Caltha elata. Duthie, sp. nov.*—Caulis elatus, atroviridis et interdum rubescens. Folia suborbiculata, argute serrata, inferiora longe petiolata, lobis basilaribus imbricatis; petiolo cylindrato, haud sulcato. Flores 1—1·7 poll. diametro. Stamina plurima. Lobi stigmatici breves. Folliculi erecti, rostro brevi.

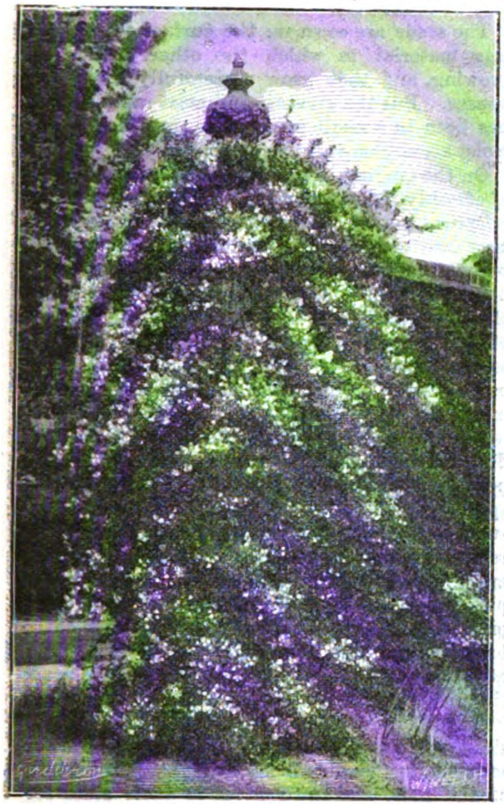


FIG. 71.—CEANOTHUS THYRSIFLORUS IN FLOWER AGAINST A WALL AT KEW.
(*Photograph by C. P. Raffill.*)

The garden forms of C. azureus and C. americanus have long been favourite garden plants, and are sufficiently hardy for general culture in the open border. When grouped together in masses they are very effective when in flower in late summer and autumn, and keep up a succession of flowers for several months. The variety known as "Gloire de Versailles" is one of the finest and hardiest of these, with flowers of a bright blue colour, and they are produced in profusion in late autumn, when many other shrubs have long been past their best. These garden varieties all flower on the ends of the shoots of the current year's wood, and for this reason any pruning which they require should be done in spring before growth commences. *A. P. Raffill, Kew.*

[In 1896 Mr. J. Burtt Davy, then of the University of California, now of the Agricultural Department of the Transvaal, sent us a sketch of a flowering shoot of this species, which was cultivated many years ago at Chiswick, but was afterwards lost to cultivation, or, at any rate, was rarely met with. Ed.]

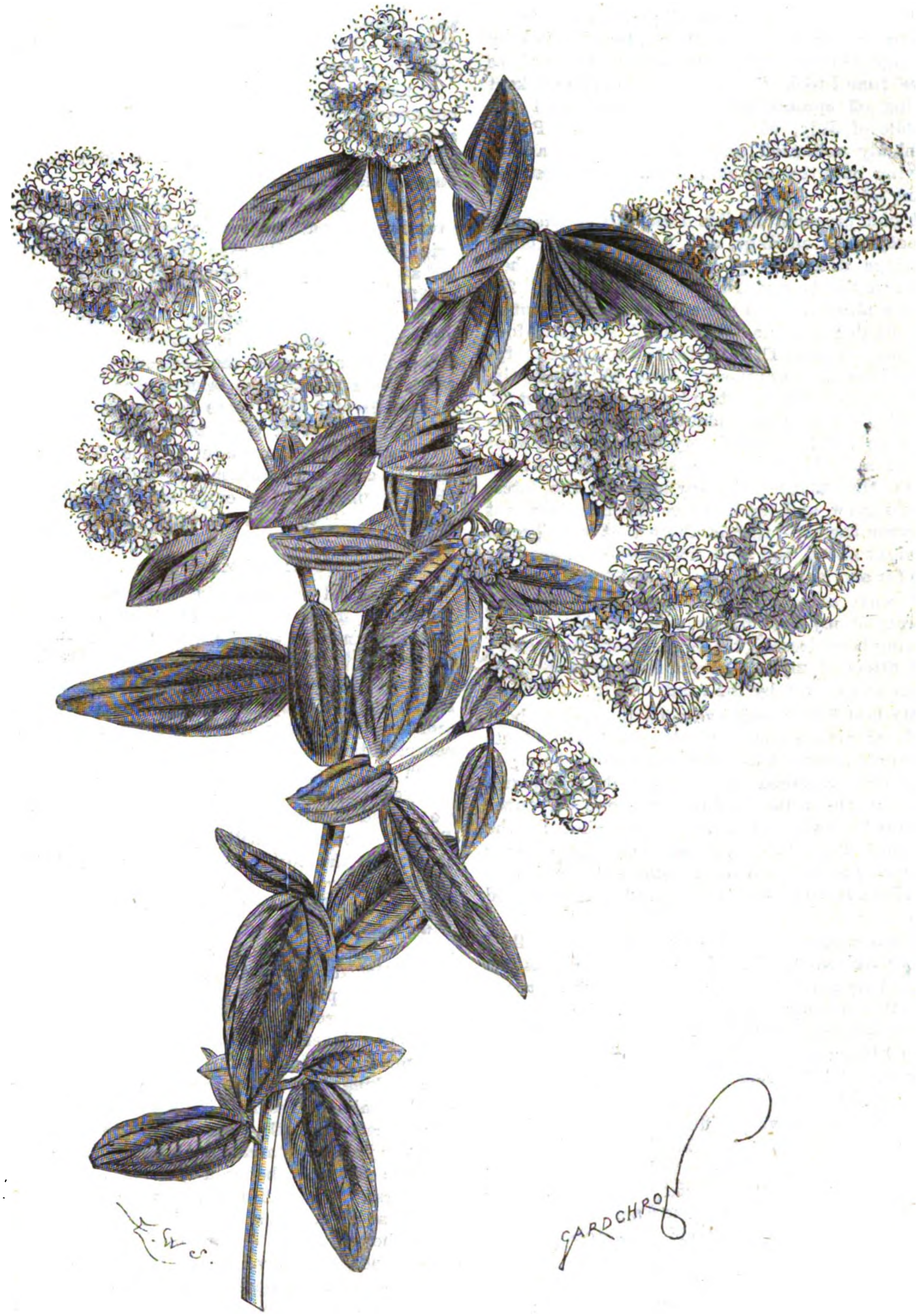


FIG. 72.—CEANOTHUS THYRSIFLORUS: FLOWERS LAVENDER-BLUE.

POTATOS.

Express Culture by an Amateur — An "Eldorado" Tuber weighing 2 oz. produced over 3,717 times its own Weight. — A good deal has been said on the subject of Potatos within the past twelve months. In fact, the great Potato boom has been the chief topic of conversation at all the markets for some time past. Not only have farmers and market-gardeners taken up the "craze," but hosts of amateurs who possess a little knowledge of horticulture have bought tubers at a high price, partly to make experiments and test the different kinds and qualities, and partly in the hope of increasing the family exchequer.

Of all the new kinds of Potatos that have been brought out of late (and their name is legion, although it appears likely that several old varieties have been given new names), none has received the same amount of attention as the now famous "Eldorado," which was produced in Scotland by Mr. Findlay, the noted raiser of many of our best varieties.

The fame which this variety has attained is, I consider, thoroughly well deserved, as I am sure my readers will agree when I have related my own experience in the art of propagating them.

In January, 1904, I purchased an "Eldorado" tuber weighing barely 2 oz. from Messrs. Dean Bros., of Dowsby Hall, near Bourne, Lincs., for which I paid £20. It was a beautifully-formed little tuber (about proper seed size), and had seven eyes. I kept it in a room with plenty of air and daylight until the beginning of March; then I placed it in the greenhouse and left it in gentle heat to throw out sprouts for about three weeks. When each eye had commenced to grow, I cut the tuber into six pieces (two of the eyes were too close together to divide), and set each piece into a 6-inch pot in leaf-mould and sand, and placed them in a small propagating frame which I had built in the greenhouse. These very quickly commenced to grow, and in two or three days' time I took off their first sprouts, and kept taking off sprouts every other day until the middle of July, when the cut pieces of Potato suddenly collapsed and were gone in a day, leaving only the dry skin, not a bit of substance being left.

I had procured by this time 179 sprouts and twenty-eight cuttings, and I took other rooted cuttings which the plants threw up from their roots until August 10, and so I obtained 250 plants altogether. I commenced to plant out in the garden on June 3, when I set forty-four sprouts; on June 11, forty-four; June 16, twenty-six; June 21, twenty-six; June 26, twenty-six, and kept on setting late plants until August 20 I had 150 really fine plants, but from the remaining 100 I expected very little, as some went wrong and the others were so very late. I have found that neither the earliest nor the latest plants grew and produced so much as those set between the two—that is, those that were grown straight ahead and were not checked in growing did far and away the best.

I was unfortunate in completely spoiling twenty of my best plants owing to the ground having been dressed too thickly with lime, and I lost fifteen of my late ones as they were eaten by slugs and broken by the wind.

My best fifty plants averaged in weight about 4 lb. of tubers each, and the best 150 plants averaged nearly 3 lb., the last plants, being so very late, averaged little over ½ lb. per plant. Anyway the total produce of the 2 oz. tuber weighed 4 cwt. 1 st. 2 lb. 3½ oz.—that is, the produce of one tuber yielded over 3717 times its own weight of beautiful Potatos. The best root yielded 6 lb. 6 oz., and the heaviest tuber weighed 1 lb. 2 oz.

I was surprised that the cuttings did so well. I only took twenty-eight (in the same way as you take Pelargonium cuttings, without any root), and they averaged 3½ lb. per plant. I could have taken scores more, but I thought they would do very little good, and I was afraid of injuring my plants, but I feel sure it would have paid me well to have done so.

I think the above testifies to the value of this variety, and it is a fine, handsome and prolific sort. Its foliage, flowers and habits are very distinct from any other variety. It is a marvellous producer, rapid grower and a disease resister; it is of fine quality, I am told, as a cooker. What more can one want?

My readers will I feel certain agree that my results were not bad for an amateur; and if I an amateur can attain such good results, what should a professional gardener achieve? I have heard of one in this neighbourhood who produced nearly 35 stones of "Eldorados" from a tuber weighing 1⅛ oz., and of another who dug a root which weighed over 12 lb., and this a sprout.

It has been said that Potatos raised from sprouts are not so good as those grown from the tuber, but I fail to see this, as in all other plants the higher they are cultivated the better they become. For example, the budding of Roses and the grafting of Apples, the results of which are acknowledged as finer and better than when grown on their own stocks. The only advantage, I think, in growing from tubers is, the plants get a rather better start, as they have something to feed on in their earliest stage; but when sprouts once start no one could tell the one from the other, as I had both growing side by side.

My garden is not good land for Potato-growing, but I gave it a fair dressing of farm-yard-manure, and at the rate of 12 cwt. of artificial to the acre, composed of three parts superphosphate of lime, two parts kainit, and one part sulphate of ammonia. I also sprayed my Potatos three times with "Strawsonite," a mixture prepared by Messrs. Strawson & Co.

It has been said that some "Eldorados" came out amongst the "Northern Stars," but the odd sports that I have had grow among my "Northern Stars" are entirely different, so I think this is only an old woman's tale.

I think my "Eldorado" was a very good investment, as although they have come down in price lately to little over 10*s.* per lb., I shall get a very good percentage on my original outlay of £20.

In my opinion nothing can equal the "Eldorado," and if this last season had been a bad Potato year, as the previous two seasons were, there would have been a great demand for it, even greater than there is. In time, when it is cheaper, it must come to be the chief main crop, and take the place of the Up-to-date, as I feel certain its own merits will obtain for it the first place in the crops of Potato-growers. *Rev. G. W. Ridley, Bratoft Rectory, Burgh R.S.O., Lincs.*

COOKING-POTATO TESTS.

The second or deferred testing of cooked Potatos at Marks Tey served to bring out several facts in connection with Potatos. The first thing to be noted is that whilst some tubers maturing late, as Scotch tubers do, further mature or develop starch in their composition when stored for a few months after being lifted, equally may it be assumed that southern-grown Potatos, ripening much earlier, are at their best up to the end of the year, then commence to deteriorate. Thus we should assume that as food, southern-grown Potatos should be utilised up to the end of December, the northern-grown tubers following till the spring. If these variations do really take place in northern and southern-grown Potatos, and of course the assumption is open to question, may it be admitted as a basis for that unquestioned fact that northern-raised tubers give, when planted in the south, much better growth and crops than southern-grown tubers as a rule do? Then another and certainly more well-grounded assumption derived from the Marks Tey cooking test is that soils do greatly affect edible quality. Taking Up-to-Date for instance, the variety specially cooked first to present a point or judging standard, there was the widest possible difference between the best sample and the worst. Two dishes at least were speedily discarded as close, wet, and tasteless, whilst the best dish showed really capital quality in texture, appearance, and flavour. It is easy to understand what a low opinion of Up-to-Date would be formed by those whose inferior soils produced tubers of the worst quality. But those whose soils would produce the best quality would naturally be elated. The same strange difference in quality arising from diversity of soil was found in every case where there were three or more dishes or samples of any one variety cooked.

All the samples were boiled in their skins. That may be very good practice whilst the skins remain fresh, or have been well kept from exposure to the air; but later it is without doubt best to remove the skins, as is commonly done, as nothing can well prevent the coats from absorbing from the air a certain amount of astringency, and that element necessarily imparts its unpleasant taste to the Potato. *A. Dean.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM HYBRIDS, &c., AT WALTON GRANGE.

PERSEVERANCE is a characteristic of the Orchid hybridist, and when pursued intelligently success is obtained. One section of Orchids after another has been conquered by him, but until very recently the Odontoglossums occasioned the greatest difficulty. Such, up to a certain point, was the experience in the collection of W. Thompson, Esq., at Walton Grange, Stone, Staffordshire, under the management of Mr. W. Stevens. But most marked success has resulted from the experience gained by former failures, and the method by which thousands of plants of many interesting crosses of Odontoglossums have been obtained may be of interest.

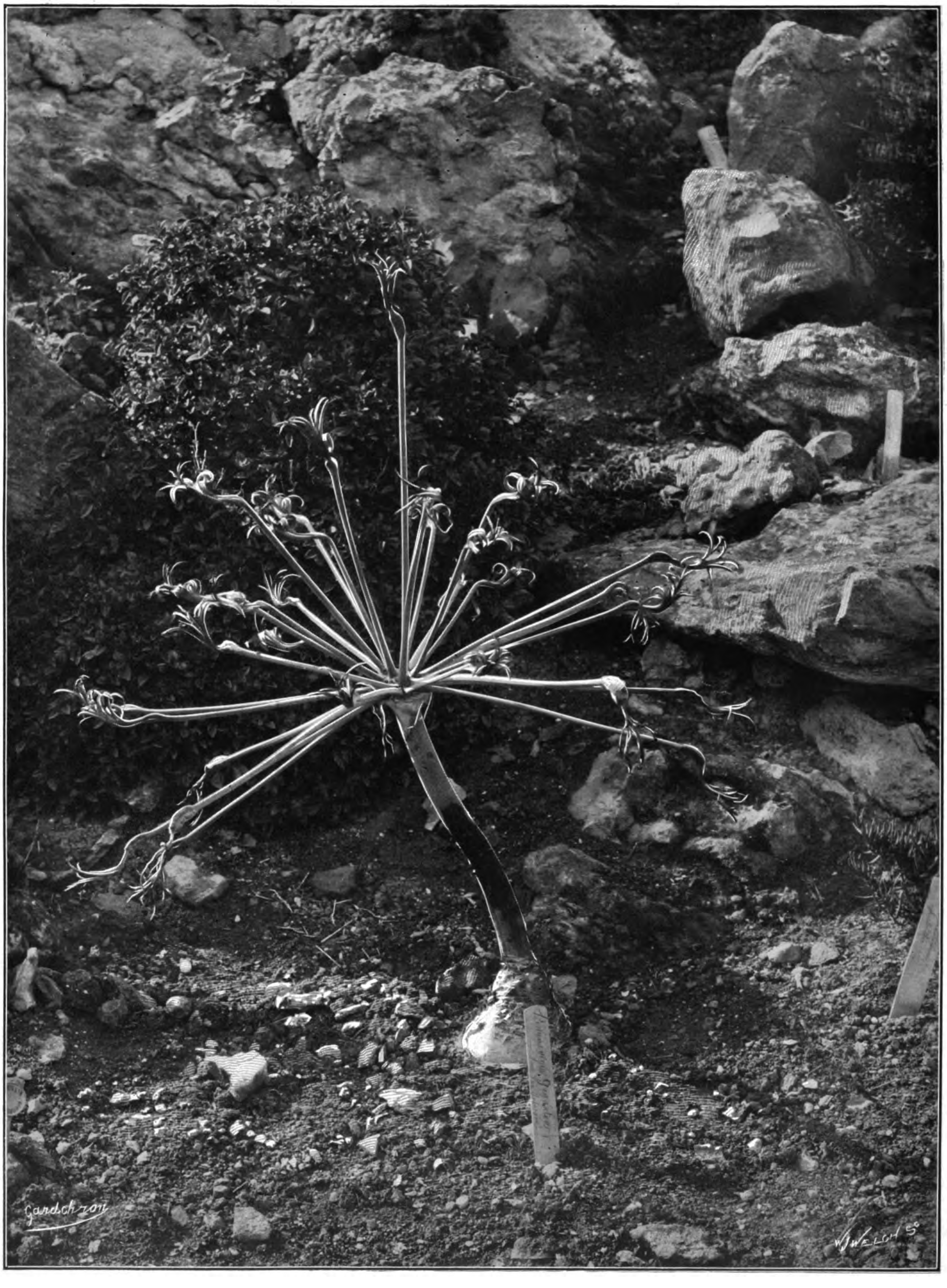
The seeds are sown on the surface of the potting material in which the other plants are growing, and they grow successfully in several houses. But the greatest and most rapid success has been in a small sunk house, in which a cool, moist atmosphere always exists.

On the staging in this house are large numbers of freshly-imported plants of Odontoglossum crispum, potted up in the usual manner, and kept continually moist. These are used as foster-parents for the cross-bred seedlings, the seeds being sown on the imported pseudo-bulbs and rhizomes, and in a less degree on the surface of their pots. Invariably the first seedlings to germinate are those on the bare moist pseudo-bulbs. This seems to have distinct bearing on the "mycorhizas" of Orchids, an article on which was published in the *Gardeners' Chronicle*, September 22, 1900, p. 218. Later those on the peat germinate, and last of all those on the sphagnum-moss. But the differences in the surface on which the seeds are sown give other results. Those germinating on the pseudo-bulbs are the most likely to be reared, those on the peat or pieces of crocks come next, and those on the sphagnum-moss are the least likely to be brought up, their constitution being more delicate from the first. The first object is to prick the little seedlings off into dwarf thumb or "thimble" pots, a dozen or so in a pot. These store pots are placed in batches of two dozens or so in shallow wooden boxes about twice the depth of the pots, and with holes in their sides for ventilation. Squares of glass are placed over the boxes, and they are put on a narrow shelf in a cool, moist house within a foot of the glass of the roof. When a quarter of an inch high, or before if necessary, the little plants are potted singly or three or four together in "thimble" pots, and returned to the shallow boxes on the shelf, and covered with glass until they have got over the shift, when they are gradually acclimatised to the air in the house and the glasses left off.

In the main seedling-house it is a pretty sight to see the thousands of seedlings, including a few crosses between Cochlioda Noezliana and Odontoglossums, and among them nice little plants of the beautiful Odontioda × Vuylstekeæ, which was the "sensational" plant of last year's "Temple" show (see *Gardeners' Chronicle*, June 4, 1904, p. 360). Crosses with a fine form of Cochlioda vulcanica have also been successfully made; but these Cochlioda crosses are not so plentiful as others between fine spotted forms of Odontoglossum crispum, O. maculatum Thompsoni (a gigantic form), O. Harryanum, O. Hallii, fine varieties, and generally the best procurable types.

It is interesting to follow the plants from the germinating stage to the plant in flower, as they can be followed at Walton Grange. On the shelf the little plants in boxes are graded, the smallest being at the end of the house and the largest near the door. Later they take their places on the staging in the same house, and as

Supplement to the "Gardeners' Chronicle."



Brunsvigia gigantea, flowering in the open ground at Belvedere, St. Lawrence, I.W.
Inflorescence 37 inches across; Colour, deep rosy-pink.

the space is needed pass out into another cool sunk-house, now three-fourths full of Odontoglossum hybrids. On one side is a batch of O. × loochristyense, raised at Walton Grange between fine varieties of O. triumphans and O. crispum. This batch affords a striking example of the variability of hybrids, for it contains good forms of two sets, the one the yellow-ground chestnut-blotched type as imported, and others varying between it and the purple-brown blotched O. × Vuylstekei, the lips being very dissimilar. Another instance of variation is in O. × waltoniense (polyxanthum × crispum), the members of which generally have finely formed canary-yellow flowers, with sometimes large red-brown blotches, but one of which now in bloom has fine cream-white flowers (showing much of O. crispum) with a slight yellow shade and distinct brown markings.

There are several houses of finely-grown established Odontoglossum crispum, a number of which are in flower or bud. Some handsomely blotched forms have appeared at Walton Grange, and others of the best have been acquired. Grouped together in one house is a batch of sturdy plants of remarkable varieties, including O. crispum Lindeni and O. c. Luciani (two of the finest blotched forms), O. c. The Earl, O. c. Stevensi, O. c. Robert McVittie, and O. c. Victoria Regina, all handsome spotted forms which have received honours at the Royal Horticultural Society when shown by Mr. Thompson. With them are O. crispum Thompsoni (a very remarkable form) and O. crispum Solum, which appeared at Walton Grange and which is one of the most remarkable variations yet seen, its lip being wholly claret-purple in colour with but a bare white margin at the apex, an occasional dark purple blotch also appearing on one of the other segments.

Other famous varieties present are O. crispum heliotropium, O. c. Annie, O. c. Capartianum, O. c. The Bride, and O. c. Cleopatra (a fine white flower), O. c. William Stevens (a good blotched form raised from true seeds of spotted O. crispum), O. × Crawshayanum (Hallii × Harryanum) (one of the showiest of yellow and red-brown hybrid (a fine form of which was in bloom), O. × Wendlandianum, O. × Ruckerianum ocellatum (very handsome and distinct, O. × excellens Thompsoni and O. × excellens eugenes, the latter specially interesting as being parts of the plant shown from Trentham as O. eugenes which obtained a first-class certificate in 1883.

In another house is a batch of Odontoglossums, out of which some good O. × Adrianæ are flowering, one large white heavily blotched form being very close to O. crispum; also O. Hunnewellianum and a great quantity of O. Pescatorei, one being a prettily spotted variety, and another a large specimen with thirteen spikes, while at one end is a batch of free-flowering O. Pescatorei raised true from seeds. One fine old plant of O. × mulus had probably seventy or eighty large bulbs and eight branched spikes of flowers.

In another cool-house with many Odontoglossums on a shelf is a lot of O. Rossii majus in bloom, pans of scarlet Sophronitis with thirty to forty flowers, large baskets of Vanda Kimballiana, and, on the stages in bloom, Cymbidium eburneum and various Dendrobiums, and a fine collection of Miltonia vexillaria are showing well for flower.

The hybridising of Dendrobiums is also in progress and some pretty things are in flower; and of Cypripediums the plants in bloom are represented by C. × Thompsoni, C. × Hera (of a very fine colour), C. × aureum Hyeanum, C. × Miss Louisa Fowler, and a few other good hybrids.

In a rather lofty house, the stage in which is filled with good specimens of the useful white Eucharis × Stevensii raised at Walton Grange, and which is said to be perfectly proof against mealy-bug, which sometimes attack other Eucharis, are suspended a nice collection of Phalænopsis, which have been so grown for some years.

The largest houses are lofty, and the staging is carried up proportionately nearer the glass than in most places, and the basements are planted with Begonias, Clivias, Tradescantias, and other free-growing plants, which seem to have a salutary effect on the Orchids. The use of decayed leaves for mixing in the compost for Orchids has been abandoned at Walton Grange.

BELVEDERE, ST. LAWRENCE, I.W.

(*See Fig. 73 and Supplementary Illustration.*)

IN the Supplementary Illustration to the present issue is presented a view of Brunsvigia gigantea, or more properly B. multiflora, in flower out-of-doors in Lord Walsingham's garden at Belvedere. This garden is situated about 2 miles out of Ventnor, on what is known as the Undercliff, on the south coast of the Isle of Wight. Brunsvigias are generally described in the text-books as "showy greenhouse plants from the Cape of Good Hope," and in most situations in these islands they undoubtedly require the protection afforded by a glasshouse, not only to obtain in them satisfactory growth, but to ripen the bulbs sufficiently to produce flowers. It is therefore quite an exceptional circumstance to have B. multiflora flowering so grandly, as shown in the Supplement, at the base of an outside rockery in July last. Its effect can best be imagined when it is stated that the inflorescence was 37 inches across. The perianth of this species, which was introduced to Britain in 1767, is rosy-pink inclining to red in colour, and a good figure may be seen on reference to the *Botanical Magazine*, t. 1619, prepared from a plant which flowered in one of the hot-houses of Messrs. Loddiges & Sons, at Hackney. A very long list of synonyms is given, from which it appears the plant has been described as a Crinum, Hæmanthus, Amaryllis, and even as a Narcissus.

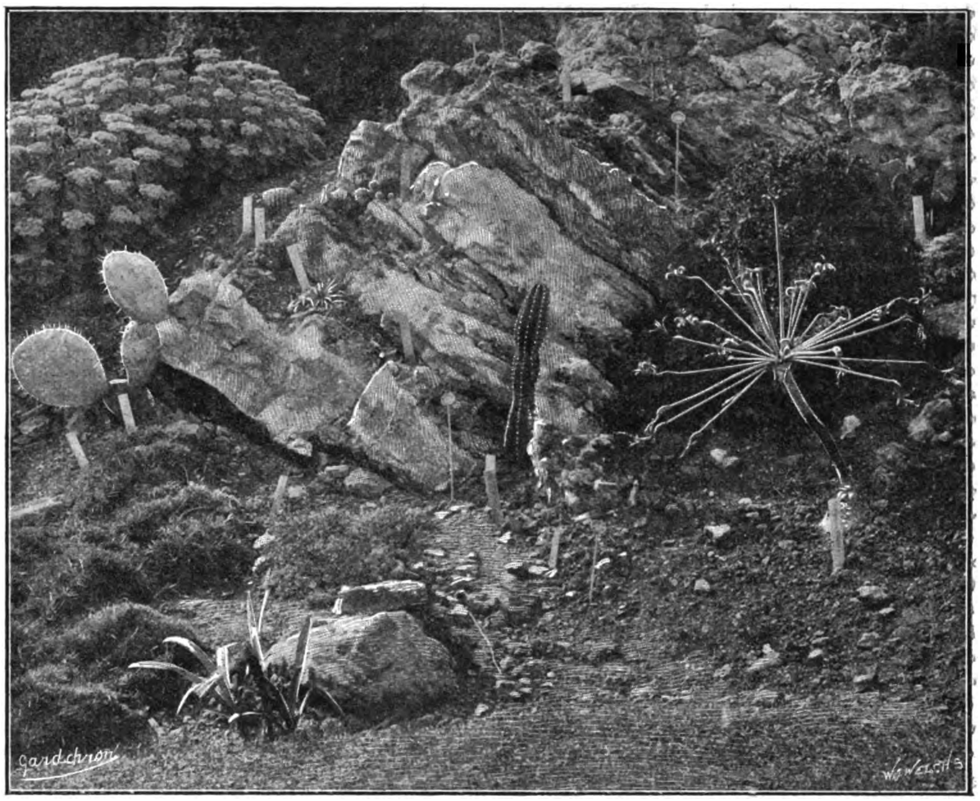


FIG. 73.—VIEW OF A PORTION OF THE ROCKERY IN THE GARDEN AT BELVEDERE, ST. LAWRENCE, I.W.

(*From a photograph by J. M. Allen, Ventnor.*)

Within a foot or two from the plant of B. multiflora there is another one representing B. Josephinæ, figured in the *Botanical Magazine*, t. 2578, and of which we present on illustration on p. 186. The plant has made a very large bulb, and will be likely to flower this season if there is as much sunshine as last year. In fig. 73 may be seen better than in the Supplement the surroundings amid which the plants are growing, and we may point out that they are exposed directly to the south, only a very short distance from the sea, whilst the rockery, as well as the general incline of the ground and the high cliffs behind, shelter the plants from the north.

Taking into consideration the natural conditions affecting the site of this most interesting garden, and also the additional shelter provided by hedges and rockeries, &c., it would be difficult to imagine a garden which, being out-of-doors, could offer better facilities for the acclimatising of tender species of plants than exist at Belvedere. The results obtained, nevertheless, are more startling than might be expected, and success has followed some of the most daring experiments.

We have only seen the garden as it appeared at the end of January, when many of the choice bulbs would naturally be little in evidence, but if we enumerate the names of some of the plants that we noted, it will afford some idea of the collection of tender plants which grow there in the open air, most of them very successfully:—Romneya Coulteri, Nerium Oleander luteum, double-flowered variety; Fabiana imbricata (3 to 4 feet high, just coming into flower), Iris stylosa in bloom, Gardenia globosa (planted in September and partially protected during winter by an upturned bottomless basket), Eupatorium petiolare, planted three years since, and showing flowers; Tulbaghia violacea, Digitalis obscurus, Campanula Vidali, protected with basket; Lonicera fragrantissima, in flower; Veronica Hendersoni variegata, 2 feet high, and in flower; Calceolaria rugosa (integrifolia), a shrubby species from Chili, which, as we were informed by Mr.

Murrell, the gardener, produces its yellow flowers until the month of November; Eleagnus macrophyllus, a bush 5 feet high and more than this in diameter; Hedysarum multijugum, 4 feet high and 6 feet in diameter; Hakea suaveolens, 4 feet high, and Cestrum (Habrothamnus) elegans (this showy greenhouse plant is growing on the west side of a hedge running north and south; it gets cut back a little by the cold, but recovers and flowers freely); Bowkeria triphylla, 9 feet high, flowers of which from this plant were figured in our Supplementary Illustration, Dec. 10, 1904; Plumbago capensis, also on the west side of the hedge, Polygala chamæbuxus var. purpurea, P. oppositifolia (always in bloom), P. Dalmaisiana, Datura (Brugmansia) sanguinea, a large shrub, which flowers each year; Abutilon vitifolium, two years planted, and protected in winter by an upturned basket; Asparagus (Myrsiphyllum) medeoloides, A. Sprengeri, A. graveolens "grata," Desfontainea spinosa, a plant that at present does not make satisfactory growth; Agave americana in large plants; Eucomis punctata, which flowers well each season; Odontospermum (Asteriscus) maritimum, bearing some of its yellow flowers in January; Eugenia Ugni, Leucodendron argenteum (protected by basket), Strophanthus capensis (protected by basket), Exogonium purga, its great bulb, which flowered last year, still visible through the soil; Indigofera Gerardiana floribunda, 5 feet high; Coronilla glauca, 3 feet high, presenting a mass of flowers in January; Anemone fulgens in bloom in the same month; Sophora (Edwardsia) microphylla, 3 feet high; Citrus trifoliata (triptera), Nertera depressa on the rockery, Acacia Drummondi coming into flower, protected by upturned baskets; A. armata; A. verticillata, 10 feet in diameter and nearly as much in height, forming an umbrella-like top; Coronilla viminalis, protected; Lasiandra macrantha, protected; Leonotus leonurus, Sutherlandia frutescens, Cassia corymbosa, Diplacus glutinosus, which flowers, but at the time we saw the plant quite devoid of the stickiness so characteristic when grown indoors; Agathea cœlestis, in flower; Bouvardia triphylla, B. "Alfred Neuner," out all winter; Diosma gracilis, its tiny white flowers open in January; Illicium religiosum, Leptospermum bullatum, Clianthus magnificus, 4 feet high and 10 feet in diameter, its numerous inflorescences partly developed in January; Geum Heldreichii in flower; Melaleuca styphelioides, Gazanias in flower, having been planted six years; Sparmannia africana, 4½ feet high (protected by basket); Cypripedium insigne, on banks near stream; Agapanthus umbellatus, Cantua dependens (see illustration in our last issue), a large shrub which flowers close to the residence. Under partial shelter from the residence are also Lapageria rosea, Mandevilla suaveolens, Bignonia grandiflora, and Swainsona galegifolia alba. Aloysia citriodora grows finely in beds.

On the margins of most of the borders thick lines of Freesias were about 3 inches high, and in their thousands must make a very pretty and fragrant feature when in flower. Sparaxis and similar Cape bulbs are cultivated in groups on or adjacent to the rockery. There are hardy Opuntias and other species of Cactaceous plants succeeding well, some of which may be seen in the illustration at fig. 73. The photographs are from Mr. J. M. Allen, Ventnor.

FRUIT REGISTER.

THE HERMANN'S APPLE.

A MEDIUM-SIZED, Pearmain-shaped fruit with a short stalk and depressed eye. The skin is of a rich red colour with occasional stripes of a deeper tint. A coloured illustration is given in the March number of the *Garten Flora*.

The Week's Work.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Calanthes of the deciduous section should be repotted when the new growths attain to the length of an inch or so, and before the new roots have become sufficiently long to be in danger of receiving injury during the process. Prepare a compost of good fibrous loam and peat in equal parts, sphagnum-moss one-fifth part of the whole, and a small portion of dried cow-dung, adding sufficient sand and small crocks to make the whole porous. Allow this compost to become warm before using it. Prepare clean pots, making them rather more than one-third full with drainage material. The pseudo-bulbs should have the old soil shaken from their roots, shortening these to about 2 inches. Place some rough material over the new drainage, and holding the bulbs in the hand, proceed to fill in with the compost to near the rim of the pot, pressing the soil moderately firmly, and just covering the bases of the coming growths. Place the plants in a low-roofed house where the atmosphere is maintained hot and moist, shading the plants from strong sunlight during the early period of their growth. Apply no water to the roots for two or three weeks, and take care not to wet the young foliage. Afterwards, when water is needed, apply it very sparingly and infrequently until the roots reach the sides of the pots, then, if favourable conditions prevail, dryness should no longer be permitted. C. Veitchii, C. Turneri, C. Regnieri, and hybrids therefrom may be propagated by taking off the apical portion of the constricted bulbs and inserting them in moist sand. Place these in a propagating-pit, and when young growths appear fix the bulbous portion in small pots and cultivate them in considerable heat. In the early stages of growth these Calanthes must not be subjected to any fumigant, or the foliage may suffer disfigurement.

Phaius grandifolius and others of a like nature will need attention a week or two after the spikes have been removed. Excepting in the case of small plants, which may be potted on without suffering much root disturbance, these are somewhat difficult to re-establish. Specimens will keep in good condition for several years if afforded an annual resurfacing with good fibrous loam, peat, and sphagnum-moss mixed together in about equal parts, sprinkling in a few crocks during the operation. Should, however, repotting be necessary, carefully remove the rooted portions from the old soil and crocks, and re-insert clean crocks amongst the roots in a new pot to about half its depth, filling to near the rim with the above mixture. Place the plants on a moisture-holding stage in a warm-house, and apply very little water for a considerable time after such disturbance. To keep the convolute growths free from injurious insects, spray them over every other week with some safe insecticide. The "Cooksonian" hybrids now flowering should be kept fairly dry until the new growths are somewhat advanced. P. simulans and P. tuberculosus, also flowering, will need a partial rest until they commence growing again. Spray the leaves frequently to keep them free from insect pests.

Daily Operations, consisting of damping, watering, ventilating, and shading, should be carried out with the utmost care. Atmospheric moisture should now be abundant in most houses, and to promote this a thorough damping of the floors and stages is necessary early in the day. Watering should follow when the temperatures are on the rise, and, in the case of pseudo-bulbous Orchids, should at this season be only done when growing plants are approaching dryness. Ventilation should be afforded gradually, never opening the ventilators and applying shading simultaneously; but first afford a little air, then, if needed, employ shade; but when the temperature again rises admit more air. The use of shading early in the day is much more necessary than it is later, even if the sun remains bright. Gradually increase the temperatures in the warm-houses as the season advances, but be very chary of much fire-heat.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Shading.—Attention is now necessary to the shading of houses. Bright sunshine occurring suddenly and followed by cold and heavy storms renders ventilation a very difficult matter, therefore the necessity of shading in good time is obvious. Tiffany blinds on rollers are always to be preferred to permanent shading. If such blinds were removed from the houses in the autumn, as they should have been, they will now need to be overhauled, and after being made good where necessary should be fixed to the houses. When this has been done, a feeling of security may be entertained that the changeableness of the weather, so common at this time of the year, will not cause injury to the plants.

Recently-propagated Plants, including seedlings, will require careful watching, and when air is necessary it must be admitted very carefully, in order to prevent checks to the plants. A high temperature by solar heat, with shade and moisture, will be safer than a lower temperature and injudicious ventilation. The syringing overhead and damping between the pots on stages and floors of houses containing fine foliage plants, &c., should be done more frequently as the days grow longer and the sun becomes more powerful.

Codiæums (*Crotons*) propagated by "ringing," as advised in a previous Calendar, should have made roots in the moss by this time, and may be detached from the old plant by breaking them carefully with the thumb and finger, in preference to cutting with a knife. Let these rooted shoots be potted and placed in a propagating frame or under a bell glass for a few days.

Seedlings of Begonias, Gloxinias, &c., being now ready for handling, should be "pricked off." This work requires the expenditure of time and patience to accomplish it successfully. Use well-drained pans filled with finely sifted loam and leaf-soil in equal parts with a liberal dash of silver-sand, which should be placed in a warm-house for a few hours previous to being used.

Gloriosa superba.—This plant may be easily cultivated, but it requires much heat during the season of growth, and following this a long period of rest. Dormant bulbs should now be potted in a compost of loam and peat in equal parts, adding a little broken charcoal and silver-sand. Pot them up in the pots in which the plants will flower, and place them on stages near to the light. Several growths from each pot should be taken up the roof of the house until the flower-buds have formed. In this manner they may be allowed to remain and flower, and are very effective; or otherwise they can be trained on wire to any shape desired for specimens. Gloriosas may be easily increased by offsets obtainable from the old bulbs previous to being potted. After they have flowered and ripened their growth water should be entirely withheld, and the plants stood underneath a stage in a house where the temperature will not fall below 60°.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Earliest Permanent Vines.—The earliest Vines which were started in December will now be at the stoning stage, and will shortly require liberal supplies of stimulants. The amount of feeding, however, should be determined by the crop and vigour of the Vines, and should never be given to excess, or it will cause the Vines to make gross growths and the fruits to "shank." Stop all strong laterals, remove any seedless berries, and otherwise regulate the bunches before the berries change colour. The border may be lightly mulched with short stable-manure, and as the Grapes approach ripeness the temperature at night should be gradually reduced to 60°, slightly increasing the ventilation at night, and reducing the atmospheric moisture generally.

Succession Vines.—Syringing must be discontinued as soon as the bunches are visible, and the necessary atmospheric moisture supplied by damping the paths, walls, and other available spaces. Examine inside borders, and if they are dry, apply weak liquid manure in a tepid state to old

Vines, or clear water only to young, strong-growing Vines. Draw the points of the shoots by degrees from the roof-glass, but do not attempt to tie the shoots in position yet, because when later the Vines are in flower the shoots may be brought down with more safety. Stop all shoots at two or three leaves beyond the bunch, according to the space there is for the leaves, always avoiding overcrowding. Remove all surplus bunches before the Vines come into flower. Disbud later Vines as they require it, or as soon as it can be seen which buds promise to make the most compact bunches. Much depends upon whether the Vines are grown on the short-spur system or on that in which a moderate degree of extension is permitted. By allowing a young rod upon an old Vine to come up occasionally from as near to the base as possible increased root action will be encouraged, and the health of the Vines and quality of the fruit will be improved. Gradually increase the temperature at night to 65° by the time the Vines come into flower, allowing 5° higher for Muscats. A high temperature at night and a too close atmosphere should be guarded against in cold and sunless weather. Strong, healthy foliage is encouraged by moderately low night temperatures, and as free ventilation as the condition of the weather will allow. Thinning of the berries should be commenced on free-setting varieties as soon as the flowers have set perfectly, but Muscats and other shy-setting varieties need to be allowed more time. The latter should be carefully gone over each day with a rabbit's tail, using foreign pollen, in addition to tapping the rods. Do not delay reducing the bunches to the number that the strength and vigour of the Vines, the size of the bunches, and the length of rods render desirable. Unduly light cropping of healthy Vines should be as much guarded against as the over-cropping of weak ones. Thinning of the bunches should be carefully carried out, and the operator should have a good knowledge of the characteristics of the different varieties, which can only be acquired by experience. No two bunches require the same amount of thinning. Commence to thin at the bottom of the bunch, using a short forked stick to steady it, and remove the seedless and inside berries first, afterwards thinning and regulating the outside berries according to the variety, so as to form a solid and compact bunch. Afford the border a good watering as soon as the bunches are thinned if the soil is at all dry, and sprinkle the paths and borders occasionally with weak liquid manure and guano-water.

Fruit-room.—Grapes in bottles have kept in much better condition with us this season than last. I am sending you a small bunch of the variety Appley Towers, which was bottled on November 22, and is now in firmer condition than Lady Downes'. Mrs. Pearson, bottled the same date, has also kept in good condition. [See p. 185. ED.]

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Asparagus.—As the crowns are now starting into growth, it is the best time to make new beds. I have been most successful with seedlings of one year, and it is an advantage when the roots are grown near to where they are to be planted. The actual process of planting is the same, whether the plants are put in raised beds or placed on the ground level. In the latter case plant in two lines, allowing 18 inches between the lines and the same distance between the plants, with a space of 3 feet between each pair of lines. If raised beds are employed, plant in three lines instead of two, and let the intervening spaces be the same as those on the ground-level. Make the trenches 8 or 10 inches deep, and spread the tender roots out carefully, leaving the crowns about 3 inches below the surface. Cover the crowns with fine soil drawn over them with the hand, and make them moderately firm. If not already done, sow seeds of Connover's Colossal—a good variety.

Globe Artichokes.—When the protection has been wholly removed and the plants subjected to exposure for a time, if inadequate provision was made in the autumn for forming a new plantation by having subjects lifted in sufficient quantity, the separation of some of the strongest shoots from the plants should now be made, keeping as many roots attached to each shoot as possible. Plant the shoots in well-prepared soil, and to prolong the supply plant them in different positions with varying aspects.

Carrots.—To provide a succession to those sown early on hot-beds, seeds may be sown on a warm border when the soil is in good condition. Do not make the drills too deep, for this is a very common cause of failure, the seedlings being then unable to force themselves through the soil. Sow stump-rooted varieties, such as Early Nantes, Early Gem, and Scarlet Model.

Beetroot.—For the supply of early summer salads sow seeds on a warm border. Carter's Crimson Ball Beet comes into use early, and is of fine quality. Sow the seeds thinly in rows 1 foot apart, and thin the plants as soon as they are large enough to 6 inches apart, stirring the surface of the ground with the hoe in order to encourage early growth. The safest remedy against sparrows is that of netting.

Onions.—Gradually harden off Onions which were raised early for planting out.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Ixias are now showing their new growth and will require protection from cold winds. Heather or Bracken Fern spread on branches will serve as a suitable wind screen. Beds of Alstromerias should be given a dressing of rich manure. Established beds of these produce an abundance of flowers in summer time.

Eremuri thrive in well-drained, deep, rich, sandy soil; they also require a sunny, sheltered situation, and when established are fairly hardy. They will soon be actively growing, when their foliage will require protection from spring frosts and from cold winds. A supported hand-light placed over them will afford them the necessary protection. See that slugs do not injure them. Eremurus himalaicus and E. robustus are two good species.

Commelina cœlestis is an old garden plant with flowers of a gentian-blue colour. The fleshy roots of these plants that were stored in leaf-soil last autumn should now be placed in moderate heat to hasten their growth. Seeds of this plant may now be sown.

The Rose Garden.—Prune the summer-flowering varieties and the hardiest of the H.P.'s. Cut out old hide-bound wood, small spray branches that cross each other and those that point inwards to the centre of the plant. Remove gross pithy shoots, selecting in preference those that are thoroughly ripened; leave six or seven buds on the shoots of vigorous growers, and prune to a point just above a bud that will grow outwards. Leave fewer buds on moderate and weakly growers. If pegging-down is desired, choose pliable varieties that have stiff flower-stems; Moss Roses are often trained in this manner. Fork in a good dressing of thoroughly decomposed manure, or, should the borders be already well supplied with humus, loosen the surface of the soil with a hoe, and apply artificial manures. Prune and train Roses growing against walls, laying-in the best shoots. Do not uncover tender Tea varieties just yet. Rose-cuttings that were inserted in pots last autumn will be ready for potting into 5-inch pots, using rich soil; keep them under glass until they have become established, and plant them out in June.

Box Edgings can now be replanted, but in doing this see that correct levels are obtained. Divide the old plants, making them of a uniform size, in order to get a regular thickness of hedge about 3 inches above ground. If the soil is very stiff place a little leaf-soil around the roots.

Other Plants as "Edgings."—Gentiana acaulis is an excellent plant for forming edgings, but must be given a sunny situation, or the plants will not flower freely. Arabis lucida variegata is a dwarf, golden-leaved plant of great value for forming lines and edgings. The plants may be divided and transplanted now. They grow best in rich loamy soil. Vinca major variegata makes a good edging if kept within bounds by repeated prunings. Cerastium tomentosum can be planted in lines like Box, or dibbled in beds. Ivy edgings and bands may be rearranged and planted. Other useful "edging" plants are Golden Thyme, Pinks, and Thrift (Armeria vulgaris).

Violas.—Have the beds intended for Violas well and deeply worked, mixing in a quantity of well-rotted hot-bed manure. If a layer of leaf-mould be strewn on the top of the bed prior to planting, it will help the Violas to withstand a period of drought. Planting may be commenced towards the end of the present month.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

The Fruit-room.—Examine the fruit-room periodically, and use first those fruits which show signs of deteriorating. Many Apples, when kept past their season, are wasted. Fruit-rooms constructed with thatched roofs and sides cannot be improved upon for keeping the fruit plump and in good condition for a long period. I have Apple Worcester Pearmain in good condition at the present time. The floor of our fruit-room is formed by the bare ground, and this is damped occasionally.

Figs.—Gradually remove the protection afforded during the winter to trees on walls. If the trees have commenced growth it will be necessary to inure the branches to sunlight and air gradually by the partial removal of the covering daily. When this has been done hang treble fish-netting in front of the trees until all danger from frost is past. If pruning was done directly the leaves fell, secure the branches to the wall, allowing plenty of space between them, so that the foliage will not densely shade the fruit and branches during the summer. It is not too late to remove useless and exhausted branches. If there are trees which are not restricted at the roots, and which made exuberant growth last season, dig an encircling trench a distance of 3 to 6 feet from the main stem, severing all roots during the operation, and filling up the space thus made with stones, broken bricks, or any non-rooting medium. Better results follow from trees planted in a restricted area. In such cases where the soil has become exhausted, a top-dressing of mortar rubble, loam, and bone-meal may now be given. Figs may still be planted against walls having a south or south-west aspect, and a restricted rooting area be formed by building a retaining wall varying in size in accordance with the amount of wall-space to cover. Allow ample drainage, and employ a compost of good loam, old mortar-rubble, and small nodules of chalk, the whole of which should be well mixed together when in a dry condition. In making the border the soil should be made very firm, in order to secure well-ripened, short-jointed growths. Where glass copings are employed to protect the trees they may now be put in place; these also greatly assist the ripening of the crops during the summer.

Peach and Nectarine-trees are now expanding their flower-buds, and means should be taken to protect them. If glass copings are used they should be erected at once. Along the front of the copings here runs an iron rod; the curtains have rings attached to them with tape, which hang from the rod, and the individual lengths of curtains are fastened together with tapes also, and secured to the ground by the same means. In the daytime the curtains are pulled along the iron rod, and made secure, thus exposing the trees to the influence of sun and air.

Grafting Materials may now be got ready. Clay which has been ground is preferable, being free from stones; this should be mixed with cow or horse-manure to make it more adhesive and less liable to be washed by rains. If grafting-wax is to be used the following formula is an excellent one for the purpose:—Boil 8 lb. of resin in an iron pot until melted, then add 3 lb. of Russian tallow and 3 lb. of yellow or red ochre; boil for one hour; then add 1 lb. of Burgundy pitch while cooling; grease a tub and empty the whole in the tub. In this state it will keep for years; portions can be broken off as required, and heated to a liquid state for use as will be advised next week.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, Mar. 28 — Royal Horticultural Society's Committees Meeting, Scientific Committee, at 4 P.M. Horticultural Club Meeting and Dinner.

WEDNESDAY, Mar. 29 — Liverpool Horticultural Society's Spring Flower Show (2 days).

THURSDAY, Mar. 30 — Royal Horticultural Society's Exhibition of Colonial Fruits and Vegetables (2 days). Torquay Flower Show.

SALES FOR THE WEEK.

MONDAY and FRIDAY NEXT—
Hardy Border and Herbaceous Plants, Roses, Liliums, Begonias, &c., by Protheroe & Morris, at 67 and 68, Cheapside, E.C., at 12.

TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY NEXT—
Absolute Clearance Sale of the whole of the Nursery Stock, under Deed of Assignment, at Edelweiss Nursery, Acock Green, near Birmingham, by Protheroe & Morris, at 12.

WEDNESDAY, NEXT—
Azaleas, Rhododendrons, Palms, Roses, Perennials, Liliums, &c., at 12 o'clock; 330 cases of Japanese Liliums, &c. at 3 o'clock, by Protheroe & Morris, at 67 and 68, Cheapside, E.C.—Orchids, Lilies from Japan, 5,000 Roses, &c., at Stevens' Rooms, at 12.

FRIDAY NEXT—
Vanda Sanderi, V. cœrulea, and 3,000 Odontoglossum crispum, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —44·6°.

Actual Temperatures :—
London.—*Wednesday, March* 22 (6 P.M.): Max. 62°; Min. 40°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 23 (10 A.M.): Bar., 29·8; Temp., 54°.
Weather—Fair, with occasional sunshine.
Provinces.—*Wednesday, March* 22 (6 P.M.): Max. 56°, Guildford; Min. 43°, North of Scotland.

Degeneration of Florists' Flowers. In anticipation of the discussion to be held by the Scientific Committee on Tuesday next, at 4 P.M., on the alleged degeneration of varieties, especially those reproduced by tubers, cuttings, or layers, the following observations of Mr. Douglas on the Carnation will be read with interest:—

"A Potato-plant, an Apple-tree, or any other member of the vegetable kingdom is liable to degeneration after a certain number of years, in consequence of the conditions of cultivation being more or less of an artificial character. The Carnation, for instance, is usually cultivated in rich, deep garden loam, or, if it is grown in pots, the plants root into even richer material, such as rich loam, manure and leaf-mould, added to which some cultivators add powdered or dissolved bones, blood manure, and other preparations of which they know nothing except that the bag is labelled in large letters 'Carnation Manure.' For something like three or four hundred seasons at least a succession of Carnations has been treated to the artificial conditions of English flower gardens; and these conditions were even more artificial in the past than they are now. The most popular book on the Carnation in the early years of the last century was written by Mr. Thomas Hogg, of Paddington Green, Middlesex, and his potting compost is described as follows: 5 barrowloads of loam to 8 or 9 barrowloads of stable-manure, and one of coarse sand. For surface-dressings subsequently the chief ingredients were sugar-bakers' scum, soap-boilers' waste, night-soil, dung of pigeons, deer and sheep, blood, &c. I am quoting from the sixth edition.

A list is given of 390 varieties of bizarre and flake Carnations, with 113 varieties of white-ground Picotees. Not one of these is now in existence; indeed, it would be a wonder if they lived more than a very few years. The original plant is found in a wild state, living and thriving on old Norman castles, such as Rochester Castle in England, and others in Normandy, living and thriving on decaying stone and mortar, where it cannot obtain any of the luxuries so freely bestowed upon it by the old florists.

The stock of cultivated Carnations has been maintained by a succession of seedlings. The flakes and bizarres were the only types of the Carnation desiderated by the old florists, and the acme of perfection was evidently reached more than a century ago. Hogg figures a very finely-formed and well-marked bizarre Carnation, but it is no better than one figured in the *Botanical Magazine*, t. 39, fifty years earlier under the name of Franklin's Tartar.

The early *Botanical Magazine* plates were usually certainly not exaggerated, and this variety, raised by an ingenious cultivator who had his garden in Lambeth Marsh, is perfect in its kind, and quite equal to the best now in cultivation. The white-ground Picotee type of Carnation came in later, but even thirty years ago the varieties grown in gardens at that time were quite equal to the best of those now in cultivation. A Mr. Norman, of Woolwich, some thirty to forty years ago, produced new varieties of white-ground Picotees of superb quality. Where are the fine varieties of these, the true florist's type of Carnation? Those of the late eighteenth-century period are gone long ago. Not one of the 500 varieties mentioned by Thomas Hogg is now in existence. The late Mr. E. S. Dodwell introduced many very fine varieties in quite recent years; he enumerates 119 varieties of bizarres and flakes, and eighty-six white-ground Picotees, most of them of his own raising; the list is contained in the third edition of his book, *The Carnation*, published so recently as 1892, but many of them have already passed out of cultivation. I often held a conversation with Mr. Dodwell on this subject, and he told me that his experience led him to the conclusion that the average life of a variety Carnation was fifteen years.

My own experience with the Carnation under many phases of culture in England and Scotland extends over a period of about fifty years.

There are doubtless several causes which tend to reduce the vitality of the Carnation. Over-propagation may be instanced as a probable cause. Any plant that is forced beyond its natural capacity must suffer to a certain extent. The most natural way to increase the stock of any variety of border Carnation is by layering; but some growers, not content with this, continue to take cuttings, and force them on in bottom-heat in a close atmosphere and in a high temperature.

Over-feeding is certainly a fertile source of disease, and as soon as disease takes hold of any plant it must be weakened thereby. Over-feeding also induces for the time a strong, sappy, but unwholesome growth, which can only be maintained for a very few years.

Over-flowering will also weaken Carnations to a greater extent than many cultivators are aware. One large double Carnation flower will reduce the vitality of the plant to a greater extent than a dozen or a score of single flowers. The single bloom is of a very fugacious character; it rapidly develops and in two or three days the petals drop off, whereas the large double flowers develop slowly and last in full beauty for ten days or more, to the rapid exhaustion of the plant. Anyone can test this. Let an equal number of plants of the same size be grown together, allow one set to carry all the flowers; in a second set let them be reduced in number, whilst a third lot should not be allowed to produce flowers at all. The extra vigour of the last-named batch will cause surprise. The vigour even of the flake and bizarre varieties may be maintained for a much longer period if a number of plants for stock purposes is grown without being allowed to flower for one year, and layers are taken from them. The colouration of the foliage has a good deal to do with the continued vigour of the plant. The darker the green the greater is the vitality.

Keeping still to the bizarre and flaked type, a notable instance may be recorded in the scarlet bizarre 'Admiral Curzon,' which is still grown in every good collection, and has been in cultivation for the long period of sixty years. This Carnation has been grown under a greater variety of conditions than any other, as almost every amateur grows it, and it has been freely exhibited north and south every year since its introduction. No exhibitor would care to be without so valuable a variety. May not its continued vigour therefore be accounted for by the growers giving a few of their plants a rest in alternate years? The same remark may apply to another favourite in the pink and purple bizarre class, 'Sarah Payne,' produced from seed in 1844, the same year as 'Admiral Curzon' was raised. It has always been valued as the leading flower in its class, and has kept its vigour. 'Sportsman,' a very fine scarlet flake, is also of the same age as 'Admiral Curzon,' from which it sported in Mr. Hedderley's garden in 1855. It still often comes out at the head of its class. These three are the only varieties known to me that have maintained their vigour for such a long period, a circumstance which I attribute to the practice of resting the plants from the efforts of producing flowers for one season. I am inclined to the belief that over-flowering is one principal cause of degeneration, and this can easily be tested by anyone who will take the necessary trouble.

The yellow-ground Picotee is a form of the Carnation much valued by amateurs, but great care is necessary in selecting varieties with good constitutions. The yellow colour of the flowers is plainly foreshadowed in the foliage of many varieties, others are of a deeper green, and the yellow colour is not so apparent. The pale-foliaged varieties are seldom worth placing in commerce, and ought to be rejected, for however high may be the quality of the flowers, if there is not a good constitution to start with, no satisfactory results can follow; and greater mischief is likely to accrue subsequently if weakly constitutioned varieties are used to breed from. This is certainly a cause of degeneration.

As far as the Carnation is concerned the remedy for degeneration is the selection of vigorous, healthy varieties both as seed and pollen bearers. There should be no great hurry to get up a stock of plants; but they should be propagated in a [more or less] natural manner. Over-stimulating manures should be avoided; the plants should be grown in good garden soil, using no stimulants but decayed farm-yard-manure, which should not be allowed to come into immediate contact with the roots. Some of the plants should have a year's rest from flowering, and layers should be taken from the rested plants. Wild plants do not degenerate, and if more natural conditions were allowed to prevail, cultivated Carnations would be free from it.

The old crimson Clove has existed in gardens for a longer period than the florists' types I have mentioned. The old Malmaison is still as vigorous as ever it was, for although disease and death may overtake it in some collections, it still holds bravely on in others; in this instance it is not necessarily the survival of the fittest, but the survival of those which have been most carefully protected, and, let me add, most naturally cultivated."

Royal Horticultural Society's Examinations, 1905: School Teachers' Examination in Cottage and Allotment Gardening, April 5; General Examination in Horticuture, April 12.—Intending candidates for the above examinations are requested to send in their entries as soon as possible. The Royal Horticultural Society is willing to hold an examination in as many different centres in Great Britain and Ireland as circumstances may demand. A capitation fee of 5*s.* will be charged for every student in order partially to defray the expenses of the examination. A Silver-gilt Flora Médal will be awarded to the candidate gaining the highest number of marks, and each successful candidate will receive a Certificate. A copy of the syllabus covering both examinations, with entry forms attached, will be sent to any person on receipt of a stamped and directed envelope. Copies of the questions set at the Royal Horticultural Society's examinations 1893—1904 may also be obtained at the Society's Offices, Vincent Square, London, S.W., price 1*s.* 6*d.* W. Wilks, Sec., R.H.S.

—— The next meeting will be held on Tuesday the 28th inst., when a lecture will be delivered by Mr. Frank Pink on "Bananas." At 4 P.M. the members of the Scientific Committee will discuss the question of the alleged degeneracy of varieties re-produced vegetatively, *e.g.*, the Potato. The Society will hold a show of Colonial Fruit and Vegetables, both fresh and preserved, on March 30 and 31.

Well-preserved Grapes.—We have received an excellent bunch of the Black Grape Appley Towers from our Calendar writer, Mr. F. Jordan, Impney Hall Gardens, Droitwich. The bunch was cut from the Vine on November 22 last, and the fruits have therefore been preserved for a period of about four months by the detached portion of the Vine being immersed in water in a stoppered bottle. The present condition of the fruit is very good, there being no sign of the skins withering, whilst the flavour and sweetness of the flesh are perfectly preserved.

"The Horticultural Directory."—We find that nearly the first quarter of the present year has elapsed without our having called attention to this publication. It is, in fact, so indispensable that it seems superfluous to mention it, but it may be well to remind some folk that it may be had from 12, Mitre Court Chambers, Fleet Street, or from our Publisher.

The Cucumber "Spot."—A well-known grower claims to have discovered a certain means of eradicating the trouble, even after it has got established in a house, and he is offering to sell his secret for the sum of £1,000. A large number of growers, we are told, met at the Tavistock Hotel on Tuesday, March 21, to consider the matter. It was suggested that the cultivators should combine and pay the money over to a trustee, to remain in his hands until a Committee has made experiments and fully proved the efficacy of the remedy. It was suggested that the minimum payment should be £2 2*s.*, this to be made by those with 500 feet run of houses and under, and those with more glass at a proportionate rate up to £25, which would be the maximum; or if it was found that sufficient money could be raised at a lower rate, the amount would be reduced. There were about fifty "market men" present. The meeting was conducted by Mr. G. Tucker, of *The Fruit Grower*. The Committee selected were Messrs. Harrison (of Cragg, Harrison & Cragg), Edney and Larsen. At the close of the meeting it transpired that it was Mr. Ladds, of Swanley, who possesses the secret. A circular has also been issued by Mr. J. Head, of Worthing, who likewise claims to have discovered an infallible remedy for the same trouble. This is a work that would be much better carried out by that properly equipped and officered experimental station at Wisley we are all hoping for.

The Henry Eckford Testimonial. — A Shilling Fund. — A Committee meeting to launch this project was held at the Hotel Windsor, on Monday the 20th inst., Mr. Percy Waterer presiding. It was resolved that the Fund should be a shilling one, so as to embrace not only the large growers, but also those whose appreciation of the work of Henry Eckford is none the less sincere because it is expressed in a modest way. Mr. Percy Waterer was unanimously elected Chairman; Mr. Walter P. Wright, Treasurer; and Mr. Horace J. Wright, 32, Dault Road, Wandsworth, London, to whom all correspondence should be addressed, Secretary. It is the particular desire of the Committee that the testimonial shall have universal expression, and to this end it is anticipated that the Shilling Fund will substantially contribute. In the meantime the Secretary will be pleased to hear from those who sympathise with the movement of conveying to Mr. Henry Eckford the thanks of the horticultural world for his work in the evolution of the Sweet Pea.

Scab in Potatos.—In an article on this subject in the *Journal of the Board of Agriculture* for March it is pointed out that the disease (Oospora scabies) is quite superficial, and does not affect the quality of the Potato. Nevertheless, as appearance and consequently the market value of the tubers are much deteriorated, it is recommended that seed Potatos affected with scab be immersed before planting in a solution consisting of 1 pint of formalin to 36 gallons of water. There will then be no fear of the disease spreading. Potatos should not be grown on the same land that has produced scabbed Potatos.

The Beech Coccus.—Mr. Newstead, in the *Journal of the Board of Agriculture* for March, has a paper in which he describes and illustrates the white scale which is so destructive to Beech-trees. The remedies he recommends are paraffin emulsion prepared by mixing a solution of soft soap in boiling water with an equal quantity of paraffin, thoroughly mixing and churning the mixture, and adding, when required for use, twenty times the bulk of water, churning and mixing as before. This mixture is to be applied with a scrubbing-brush diligently used on the smooth bark, and as far as possible in all the cracks. A handful of sulphur and a pint of turpentine may be added with advantage. Caustic alkali wash may also be used, made as follows:—Dissolve 1 lb. of commercial caustic soda in water, then add 1 lb. crude potash or pearl-ash, also dissolved in water; then add ¾ lb. soft-soap, with sufficient water to make up to 10 gallons. This wash may be employed as a spray in winter or in spring. Two or three sprayings at intervals of two or three days will be necessary. As the mixture is of a very caustic nature, closely-fitting rubber gloves should be worn by the operator.

Azalea indica "Hexe."—The *Revue de l'Horticulture Belge* for March gives a coloured illustration and a description of this form of A. amœna. According to M. Van den Heede, this is the result of a cross between A. amœna var. Forsteriana and the variety A. indica known as Duc Adolphe de Nassau. It appears that the hybrid is much used in Germany and in Belgium as a stock, but it has claims also upon the attention of horticulturists by reason of its rosy-carmine flowers larger than those of the ordinary amœna. Not only is the corolla coloured, but the calyx also, so that the appearance is that of two flowers one within the other. A. "Hexe" crossed with "Deutsche Perle" and with "Charles Enke" has given origin to a whole series of hose-in-hose Azaleas, the flowers of which last longer than in the case of the ordinary forms.

The Bulb-mite is the subject of an illustrated article in the March number of the *Journal of the Board of Agriculture*. The bulb-mite, Rhizoglyphus echinopus, has been studied by Mr. Michael, of whose researches we in these columns have repeatedly availed ourselves. The mites attack sound bulbs as well as those which are diseased. The measures recommended are—1, to burn affected bulbs; or, 2, wash and spray every affected bulb with paraffin, repeating the operation after a fortnight; 3, wash the bulbs in sulphide of potassium (liver-of-sulphur), 1 oz. to 3 gallons of water; 4, fumigation with bisulphide of carbon, in order to do which place the bulbs in an air-tight receptacle, and on the top of the bulbs put a saucer of the bisulphide and let the bulbs remain in the vapour for forty-eight hours. It must be remembered that the vapour is poisonous and inflammable, so that no light of any description should be brought near the fluid.

The Swanley Horticultural College.—A satisfactory report of this College, which is now wholly devoted to the instruction of women, has reached us. Up to the end of 1904 the students were markedly successful in obtaining scholarships and other awards and in obtaining posts as gardeners. The colonial training branch has an equally good record, as in eighteen months' initial work twenty-five students have been trained. The subjects undertaken are garden work botany, horticultural science and rural economy entomology, book-keeping, manual training, bee and poultry-keeping, dairy work, fruit preserving and flower arrangements. The College has good and influential supporters, and we notice among the list of lecturers the names of Messrs. R. J. Tabor (botany, vegetable pathology), F. J. Baker (horticultural science and rural economy), and Miss Turnor (gardening).

The Rainfall and the Wheat Crop.—A very instructive note, accompanied by a diagram, is given in last week's issue of *Nature*. The note was read by Dr. W. N. Shaw before the Royal Society on February 2, and gives a concise indication of the average amount of rainfall for the three autumn months, September, October, and November respectively, in each year from 1884 to 1904 inclusive. On the same diagram is noted the amount of Wheat in bushels per acre during the same years. When the curve representing the total rainfall of the autumn is compared with that denoting the yield of the

Wheat-crop in the succeeding year, the correspondence of the two curves is shown to be extraordinarily close. "The yield of Wheat in any one year seems to depend mainly on the absence of rainfall in the previous autumn, and but little on any other factor." The Wheat is, of course, an annual with a very great root development. It would be very interesting to procure information of a similar character not only with reference to annuals, but to perennials and to fruit-trees. Gardeners attach great importance to the "ripening of the wood" as a factor in the production of a fruit crop, and that is affected probably as much or more by the temperature as by the amount of moisture. Accidents such as the time and duration of spring frosts have also to be considered.

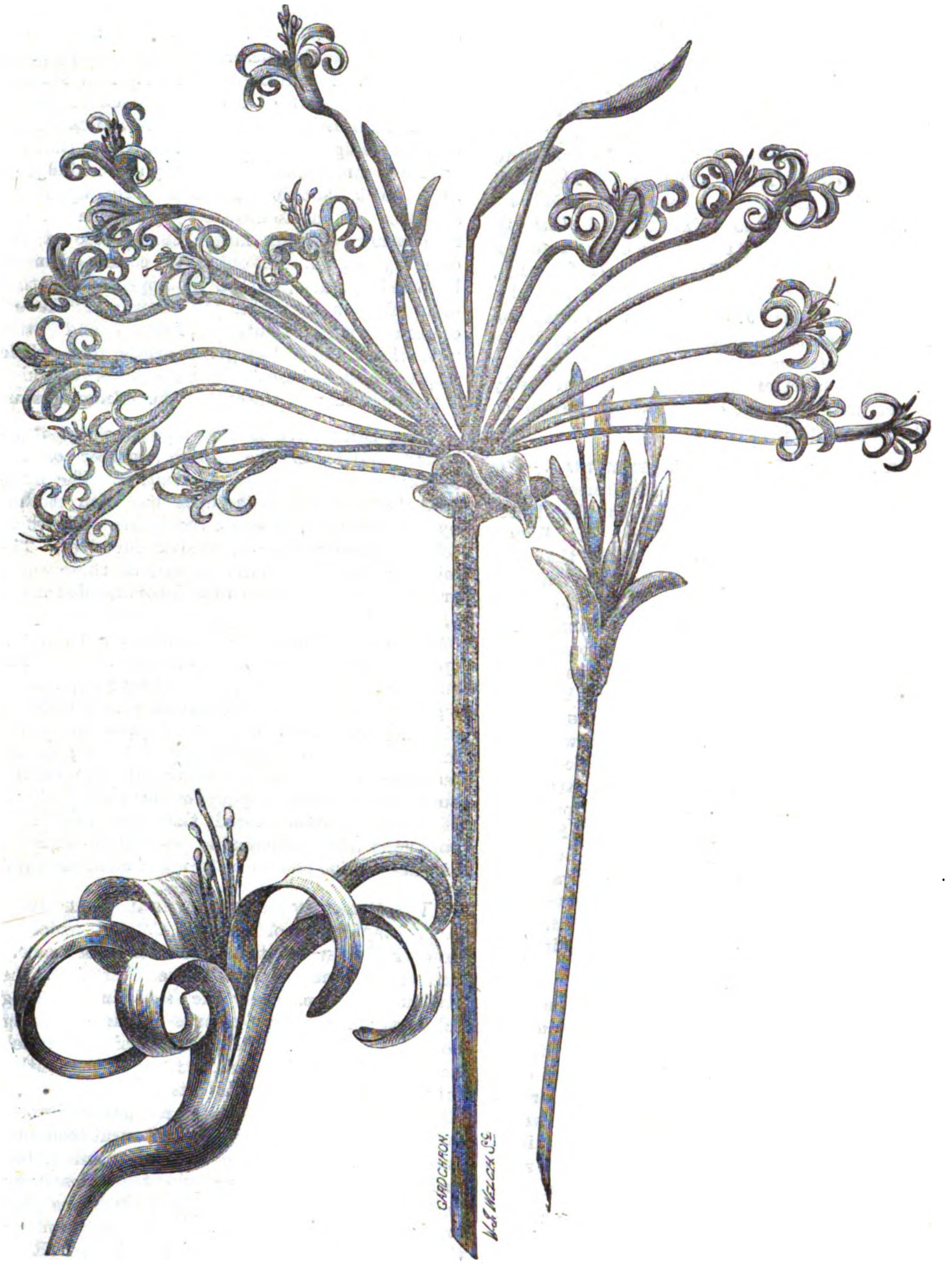


FIG. 74.—BRUNSVIGIA JOSEPHINÆ: FLOWERS ROSY-PINK.
See article on "Belvedere," p. 181.

"FLORA AND SYLVA."—The March number has a sensible article on Apple-culture, and one on the Yew, in which is a beautifully executed wood-cut purporting to represent the "Buckland Yew, recently destroyed." This can scarcely be the famous tree at Buckland, near Dover, as that is much less decrepit and more "furnished" than the tree figured, and although moved from its original position some years ago, under the superintendence of the late Mr. W. BARRON, it is (or was till last year) in a flourishing condition. There is a valuable descriptive list of hardy Water-Lilies, which are now very numerous; and a similar enumeration of the species of Meconopsis, in which attention is called to the fact that the wonderful M. integrifolia has so far failed to set seed in this country, though artificially pollinated. We believe, however, there is a large supply of Chinese seed in the hands of Messrs. JAMES VEITCH & SONS.

THE LIÈGE EXHIBITION. — The Exposition Universelle in Liège is likely to prove very successful. International horticulture will be represented by permanent exhibits as well as by temporary shows, and under very favourable conditions, and these will be held on the Cointe plateau, which is picturesquely situated and commands a fine view. The flora of the world will be represented; aquatic plants will be found in a lake, and alpine vegetation arranged on a rocky situation; a sunken track will be planted with many hardy Ferns. The various sections of the horticultural exhibition will be united into a pleasing whole by the skill of the landscape gardener, M. L. VANDERSWAELMEN. A large glazed hall, the "Palais des Palmiers," will contain the large exotic plants. A special building is reserved for the Orchids. One section will be devoted to the installation of all kinds of glass-houses, horticultural accessories, and warming apparatus. A special place on the Cointe plateau is reserved for Japanese plants, and thousands of flowering bulbs will enliven the scene in their season. A "Mountain of Flowers" is to prove an attraction. Another portion of the ground is to be set aside as nurseries for fruit-trees and as a trial-ground for market crops.

—— A Conference will deal with questions relating to different branches of horticulture, and any matter connected with these, even if not specified on the programme, may be put upon the minutes conformably with the arrangements of the organising Committee. Each country represented will form a Committee of Patronage, and already M. PHILIPPE DE VILMORIN (for France) and Dr. L. WITTMACK (for Germany) have accepted the positions of Presidents. The following is a list of the questions to be discussed at the Congress:—

First Section: *Floriculture.*—1. Flower and shrub-planting of walks, boulevards, squares, gardens, and public parks. Choice of species and varieties. Distribution and succession. Landscape gardening. 2. Which plants (*a*) are most valuable for forcing; (*b*) best bear transport; (*c*) are most in demand for exportation. Each point to be treated separately as regards trade in plants and trade in cut flowers. 3. Improvements in forcing plants (heat, refrigerating systems, etherisation, &c.).

Second Section: *Market Gardening.*—4. The best methods of market gardening (*a*) in the open ground; (*b*) under glass. The subjects to be treated separately. 5. Tools. 6 Manures. 7. Preserving vegetables.

Third Section: *Fruit Culture.* — 8. Species and varieties of fruits best suited for exportation into different countries. 9. Industrial value of fruits. 10. The protection of insectivorous birds, abolition of snares, traps, and nets, &c., international co-operation. pursuit of cock-chafers and butterflies.

Fourth Section: *Instruction.*—11. Programmes and methods of horticultural instruction in its various forms. In conferences and public classes, primary and secondary schools, sectional and professional schools. 12. Means for encouraging a taste for horticulture in all classes of society. Exhibitions for amateurs, conferences for ladies, room decorations, the workman's plot, students' conferences, &c. 13. Diffusion of instruction and horticultural publications, treatises, libraries, leaflets, magazines, &c.

Fifth Section: *Trade.* — Markets in different countries, stalls, auctions, &c.; their regulation. Vegetables, fruit and flowers in request, arrangement, selling prices. 15. Exportation of horticultural products; species and varieties in demand in different countries; packing, forwarding, easy and rapid transit, tariffs and freights, commercial customs, intermediate agents, selling prices.

Sixth Section: *Societies.* — 16. Horticultural societies from a professional and commercial standpoint. Unions, syndicates, co-operative societies for purchase, protection, and sale of produce, credit, &c., insurance schemes, &c.

THE BED OF OSIRIS.—An account in the *Times* of the recent discoveries made at Thebes by Mr. THEODORE DAVIS includes an inventory of the many and wonderful treasures enclosed in a royal tomb of the 18th dynasty. Apart from a chariot, costly furniture, and fittings of gold, was the following curious and symbolic relic:—"A mat of Palm-fibre on which the figure of Osiris was delineated in soft mould. Seeds were then sown in the mould, and in the green grass which sprang from them after the tomb had been closed and sealed the Egyptians saw an image and earnest of the resurrection. A similar bed of Osiris was found in the tomb of Amon-hotep III."

OVER-SEA SUPPLIES: FEBRUARY. — The cheapening of Cotton has reduced the value of imports, but the rise in the value of exports is remarkable—over a million and a quarter sterling in excess of the value in February of last year. According to the Trade Returns for February the value of the imports was £42,844,937, against £44,110,519 for the same period last year—a decline of £1,265,582. Concerning the value of vegetable products in the national account, we give the following classified summary of values:—

IMPORTS.

CLASS: DESCRIPTION OF PRODUCE.	1904.	1905.	Difference.
	£	£	£
Class I. — Cereals, and other field crops — Wheat, Barley, Oats, &c.	5,296,165	4,675 226	−620,939
Class II.—All other food cultures — Tea, Coffee, Fruit, &c.	3,475,816	3,467,620	−8,196
Class III.—Used in manufactures — clothing, household goods, &c....	7,619,814	5,546,210	−2,073,604
Class IV. — Miscellaneous — including seeds, flowers, &c.	3,005,348	2,736,293	−269,055
Values of Produce...	19,397,143	16,425,349	−2,971,794

The value of the wood and timber imports for last month was £665,171, which, compared with the value for February in last year (£927,192), shows a reduction of £272,021. Under a somewhat long-continued phase of depression the suggestions of some interested in providing more employment for our workers in the planting up of all waste or poor lands with suitable timber may receive attention from large owners and Government officials. By the way the prospect of an enlarged supply from Scandinavia is not encouraged by reports to hand from Stockholm. Throughout Norway there has been a great shortage of snow during the past winter, interfering in a marked manner with the haulage of logs from forest to mills, and the rainfall of last year was so curtailed as to interfere with the amount of water-power.

From trees to flowers is but a step, and in this connection it is interesting to note a reduction of £17,143 on last month's value, as compared with the same period last year—i.e., £31,027 against £48,170. It is pleasant to note that amid the horrors now being enacted in Russia, the experiment of Tea-growing in the Caucasus continues to give satisfaction and encouragement. The record of fruit and vegetable imports during the past month is as follows:—

IMPORTS—JANUARY.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	207,916	127,673	−80,213
Apricots and Peaches	3,036	644	−2,392
Bananas	61,316	76,422	+15,106
Grapes	1,984	3,324	+1,340
Lemons...	35,405	18,996	−16,409
Nuts—Almonds ...	26,298	33,760	+7,462
Others used as fruit	20,303	33,237	+12,934
Oranges...	263 739	240 593	−23,146
Pears	1,919	1,033	−886
Plums	1,264	527	−737
Unenumerated ...	12,544	10,615	−1,929
Vegetables, raw—			
Onions ... ...bush.	93,782	93,457	−325
Potatos ... ... cwt.	200,195	26,344	−173,851
Tomatos ... ,,	33,269	54,973	+21,704
Unenumerated ,,	39,553	35,008	−4,545
Totals ...	1,002,543	756,606	−215,937

In the figures concerning the output of dried fruits in California last year as compared with the preceding year, we learn that the Raisin product was 75,000,000 lb. against 120,000,000 lb. in 1903, the Prune output is put at 97,000,000 lb. against 165,000,000 lb. in the preceding year. As regards canned fruit, the "pack" for the year is placed at 2,800,000 cases, the figures for 1903 are given as 2,730,000 cases. The dried fruit imports for last month are—Currants, £27,333, against £19,304 for February, 1904 — an increase of £8,029; whilst Raisins footed up £16,807, against £8,141 for the preceding period — a gain of £8,666. Since our last notes on the subject of fruit imports from the Cape, the Union Castle Steamship Company have landed here some 6,913 cases of fruit as follows:—Peaches, 2,135; Plums, 2,023; Pears, 1,994; Nectarines, 300; Grapes, 37; Tomatos, 4; Apples, 20. The

EXPORTS

for the month—to complete the trade details—furnish very satisfactory figures. The value is placed at £25,269,063, which, compared with the total for February, 1904 (some £23,894,813), show an increase of £1,374,250. How the total is reached need not here be stated, but it may interest some to know that foreign and colonial goods of all descriptions figure for £7,619,723—an increase of £214,382 over February, 1904.

THE APIARY.

THE NATURAL HISTORY OF THE BEE.

IN order to handle bees intelligently, it is very necessary to know something about the natural history of the bee.

THE QUEEN.

Every prosperous colony will soon contain one queen, a number of drones or males, and a very large number of workers or neuters. Of these, the queen or mother-bee is by far the most important, for on her fertility the whole success of the stock depends. She lays all the eggs that produce future queens, drones, and workers. If by careful selection the bee-keeper can produce queens that are more fertile and produce workers with more lengthy proboscides or tongues, this will be a decided advantage to the community. We sometimes hear that a queen is known to be present in a certain hive, but there is little or no brood. If the apiarian will search her out, he will perhaps find that the queen is ill-developed, or in some cases she is wingless. In such a case it will be well to destroy her, and introduce another in a manner to be described later.

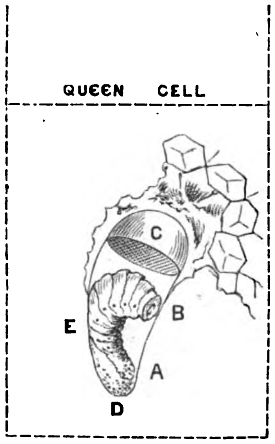


FIG. 75.—A, B, the queen-larva spinning its cocoon; A the head with the "spinnerettes" fastening the silk to the sides of the cell, and forming the respirator at the end shown at D; B, the end of the larva resting against the side of the cell, and by pressing its back against E the larva is enabled to move its head and neck on all sides of the cell, and gradually working upwards it is enabled to finish and rest upon its back with its head downwards: whilst the white "queen jelly" C fills one-fourth of the interior space, and keeps up a moisture for the growth of the larva and expansion of the abdomen, which nearly touches the jelly.

The queen is produced from the same kind of an egg as a worker, but the difference between them is due to difference in the food. The grub hatching from the egg is fed on a larger supply of better food, termed "royal jelly," which is a milky food, formed of partially digested honey and pollen. The cell, too, differs from the others. Queen cells are acorn-shaped, hanging downward in the lower corners of the frames. In sixteen days a queen emerges, and in five more days she will probably leave the hive on her marriage trip to meet the drones. The queen is only once fertilised in her life. In about another week or ten days her life's work of egg-laying is commenced. She is in her prime during the second and third summers, and during the height of the honey-flow lays 2,000 to 3,000 eggs per day; after this her egg-laying properties become reduced and she is of little value, though she might, if left alone, live for five years.

To produce the best results, the bee-keeper will be wise if he produce queens, and, when their fertility has been tested, use them to replace queens which have reached their third season. During manipulation it sometimes happens that a queen is accidentally killed; if there are eggs in the worker cells, the bees will at once commence the construction of queen cells, and remove eggs from worker cells to them, and thus rear queens.

The Drones.—These are the males; they are larger, possess no stings, and lead a happy, careless life. They are produced from eggs which have not been fertilised. It is well known that eggs from hens which are not kept in the company of a cock will produce no chicks; but if a queen be prevented from meeting the drones, her eggs produce drones only. Drones are only found in the hives from about April to the end of August, when they are driven out by the workers to die of starvation. If the supply of outside food fall off in the spring it is no uncommon sight to see the larvæ of the drones lying on the alighting board, and this is a sure sign that the food supply is very low.

Workers. — These are really imperfectly developed females. Their work is that of feeding all larvæ, gathering and defending the stores, building the comb, and following a life of unceasing labour. After leaving the cell, which is on the twenty-first day after the egg is laid, they act as nurse-bees for fourteen days. Then they leave the hive to work in the field, gathering pollen (which is carried on the two hind legs in the pollen basket) and nectar. In the busiest part of the season their life lasts from six to eight weeks, so heavy is the work that their wings are worn out and they fall to the ground to perish. Those hatched in September and October live into the next spring, as their work is not of such an exacting nature. "*Chloris.*"

LAW NOTE.

LEEMAN *v.* LINDEN & Co. (SEE P. 92).

THE Brussels Tribunal of Commerce has been considering a case in which the plaintiff alleges that some Orchids purchased by him from the defendants for a large price on the strength of some coloured representations shown to him by them, were inferior to what he had been led to expect from an inspection of the drawings, and it was therefore contended on the plaintiff's behalf that the sale should be annulled. Questions of much interest to Orchid growers are involved, and three experts, M. Jules Hye, of Ghent; M. de Bièvre, Head of the Royal Gardens at Laeken; and M. Stepman, nurseryman, of Brussels, have been appointed to answer certain enquiries, such as whether under other methods of cultivation these particular plants would have produced finer flowers than those obtained by the plaintiff, and whether such flowers would ever be similar (*semblables*) to those shown in the drawings which formed the basis of the sale. May 12 has, we learn, been fixed as the day for the reception of the decision of the experts. Until then the final judgment will not be given.

ADONIS AMURENSIS.

A PLANT that is native to Manchuria is just now invested with additional interest. A. amurensis is a perennial attaining to a height of 18 inches, with very much divided leaves, the ultimate segments being more or less linear and toothed. The "double" flowers are about 2 inches across, bright yellow, the petals being greatly increased in number at the expense of the stamens. In the specimen figured (fig. 76) some of the inner segments were more or less leafy, forming a ring of green segments, as is found in some of the cultivated forms of Ranunculus. This green condition is, we are told, not permanent. The plant is almost, if not quite, hardy, and flowering at this early period is very acceptable. Our illustration was drawn by Mr. Worthington Smith from a plant shown at the Royal Horticultural Society by Messrs. W. Cutbush & Sons, Highgate. It is figured in the *Botanical Magazine*, t. 7490.

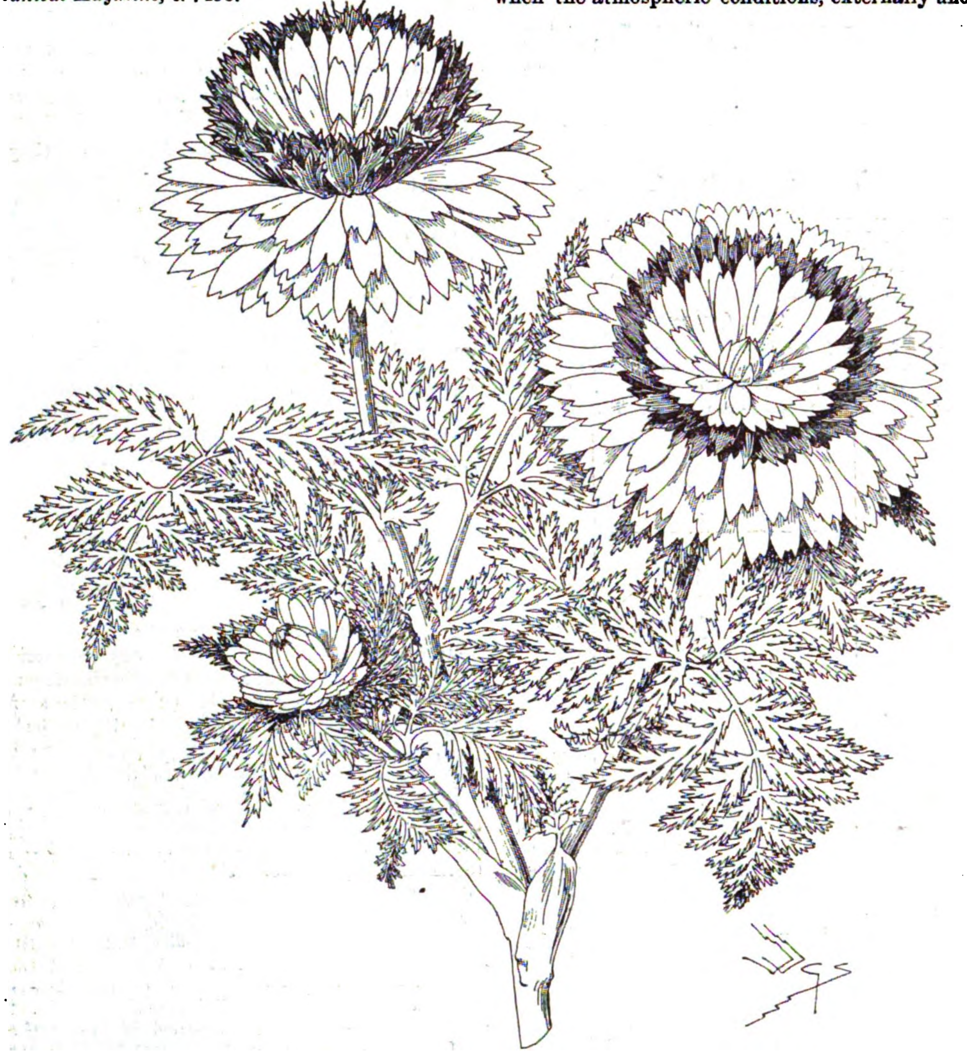


FIG. 76.—ADONIS AMURENSIS, A MANCHURIAN PLANT: FLOWERS YELLOW.
(Award of Merit, Royal Horticultural Society, March 14.)

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE CUCUMBER "SPOT."—Three-parts down the second column of my letter on this subject, printed in the issue of the *Gardeners' Chronicle* for February 18, p. 105, I stated "that in my opinion the cause of 'spot' appearing on Cucumber-leaves is not to be attributed to the composition and condition of the soil in which the plants are growing under expert management; but to the unfavourable external as well as internal atmospheric conditions occurring at a time when the vigour and energies of the first batch of plants have become nearly exhausted through the production of heavy and continuous crops of fruit during the previous ten or twelve weeks, the plants under such circumstances being more likely while in that condition to experience a check from a sudden and unfavourable change taking place in the weather after fire-heat has been dispensed with than a batch of young plants just coming into bearing would be." Mr. Thomas says on p. 138 that "most practical growers would endorse this statement," adding "but unfortunately for theories, be they ever so sound and good, once they come into contact with facts they often vanish into thin air." I beg to remind Mr. Thomas that the above-mentioned remarks were not put forward as theories but, on the contrary, as conclusions based on the results of close practical observations, and I may add that the young plants referred to above as just coming into bearing in a separate house at the time the "spot" might put in an appearance on the leaves of nearly exhausted plants, would most assuredly be in a better position, being in the full vigour of life, to resist the attacks of this disease—that is, when the atmospheric conditions, externally and internally, favourable to the production of "spot" are present than young plants just set out on the ridges, also in a separate house, would be. I think Mr. Thomas's fears regarding the bad effect that the vaporising of Cucumber-houses with sulphur might have on the fertilisation of the flowers and the subsequent sale of the fruit need not be seriously entertained, as I do not for a moment think that the sulphurous vapour as distributed by one of Campbell's vaporising machines would have any bad effect on the Cucumber flowers, though probably it would put a deposit on the fruit, which, if considered necessary, could be easily and effectually washed off with clean water applied from the hose or garden syringe a few hours before cutting the fruit for market, without in any way damaging the sale of the fruit. The vaporising of the houses could be done on the Friday evening, the fruit having been cut pretty hard for market in the morning, no more being cut as a matter of course until the Monday following. I may add that I was not unmindful of the above-mentioned contingencies at the time (December 26) I penned the article which appeared on February 18, p. 150. I may also add that I experienced no inconvenience or unpleasant sensation by remaining in the Cucumber-house while it was being filled with the sulphurous vapour, and that should the suggested remedy for "spot" in Cucumber-leaves prove effective, the apparent drawbacks suggested by Mr. Thomas are by no means alarming. To the results of scientific research when subjected to and approved by practical tests we as a nation owe and expect much. But all the same I completely fail to see in what possible way the carrying out of Mr. George Massee's prescription can effect a cure, or even act as a preventive for "spot" on Cucumber-leaves. Assuming that Cucumber-houses in which the plants growing therein had been badly affected with "spot" last summer and autumn had been thoroughly cleansed during the months say of November and December, and that every particle of the soil forming the ridges had been removed, the brickwork washed with hot liquid lime, and wood and glass with soft-soapy water and petroleum (one small glassful to the gallon), the ground floor saturated with ammoniacal liquor, finally each house filled densely with the fumes of burning sulphur, then it would be impossible for any insect or germs of disease, fungoid or otherwise, to survive the operation. Clean, fresh, loamy soil, to which a like quantity of short stable-manure had been added and well mixed together, should be then wheeled into the houses and formed into ridges in which to plant the Cucumbers towards the end of December or early in January after the compost has become fairly warm, and the plants have attained the desired size. The Cucumber seeds are in the meantime sown in 3-inch pots filled with the above-mentioned mixture in a fine state. Well, what has science told us to do with a view to prevent "spot" appearing in the Cucumber leaves months later? "To water the young plants when a fortnight old every third day with a solution consisting of 1 oz. sulphate of copper dissolved in 50 gallons of water, and after the plants have been thus treated for six weeks, to commence watering every fourth day with a solution of 1 oz. sulphate of copper in 35 gallons of water." In connection with the advice given above, I should very much like to know what justifiable ground there can be for assuming that the compost prepared as indicated above contains the germs of disease—"spot" or otherwise. I am sure that all practical cultivators—including, of course, your much-esteemed correspondent Mr. Owen Thomas—would like to have a satisfactory answer to this question. I do not think that it can be asserted that the application of the solution mentioned above to the soil renders it more nutritive to the plants. In the issue of the *Gardeners' Chronicle* for January 7 last, p. 13, Mr. J. J. Willis gives a long list of so-called remedies that had been tried and failed in a large market nursery in the neighbourhood of Harpenden. A reference to Mr. Willis's article and mine (written about the same time as his) printed on February 18, will show that we are very much in agreement as to the futility of the various supposed cures and remedies for "spot" on Cucumber leaves recommended from time to time in various publications. As a Cucumber grower, I wish to thank Mr. Owen Thomas for the kindly interest which he has, and is still, taking with a view to ascertain the cause of and cure for the dreaded "spot," which is the cause of so much anxiety to all classes of Cucumber growers, especially those who have only recently invested their hard-earned savings in the business. In conclusion, I should like to say that, in my opinion, it is only in places where Cucumbers are grown specially for market that the cause of and cure for "spot" is likely to be ascertained. When fire-heat is dispensed with, say some time in June, extra care and watchfulness should be exercised in the matter of airing and distributing moisture in the houses in the afternoon, as this is the time from which it may be said danger may be scented from afar. *H. W. Ward, Rayleigh.*

CRYPTOMERIA JAPONICA.—In reference to Mr. Bartlett's letter on p. 170, I may say that the Cryptomeria japonica which was cut down in the pinetum here was a much finer specimen than the one growing close to the Tsuga Mertensiana (Albertiana). The growth of the former tree has been more than double that of the latter during the four years I have been at Dropmore, owing to the latter tree being in a very poor gravelly soil. Philip Frost, in his "Conifer Book of the Dropmore Trees," calls this part of the grounds "Hunger Hill." I attribute the more rapid growth of the pinetum specimen to its being in a better site, and possibly to its receiving more attention as it was growing in the pinetum proper. The specimen mentioned by Mr. Bartlett as growing near to the carriage-drive I have just measured, and find it to be slightly the largest of the three trees. The dimensions are—height 59 feet, girth at 5 feet from the ground 6 feet. This is a very healthy tree, and being in a sheltered position will doubtless grow into a very fine specimen. Regarding the specimen growing at Boconnoc, Cornwall, this tree increased very little in height during the eight years I was at Boconnoc, it having already outstripped the neighbouring trees, and thus was exposed to the strong south-west winds which are so prevalent there, but I imagine it would be equal to the Pencarrow tree in girth. *Chas. Page, Dropmore Gardens, Bucks.*

CANTUA BUXIFOLIA (DEPENDENS). — Referring to the note and illustration in the last issue of the *Gardeners' Chronicle*, allow me to say that this old climbing plant is certainly very beautiful when planted-out in a border and trained over an arch fixed in a light position in a cool-house, where it will attain to a height of 9 or 10 feet. Only the main branches should be fixed in position, allowing the flowering shoots to hang down, as herein lies its beauty. After flowering, the side shoots may be pruned back, leaving an inch or so of the previous year's wood. When the new growths are an inch or two long, thin out the weakest of them to prevent overcrowding. If grown in a dry atmosphere the plant is subject to attacks of red-spider and thrips, but given the above treatment, and occasional syringings, good results will follow. The illustration showed a very strong corymb of flowers, the more usual number being nine to eleven. Cantua buxifolia may be considered hardy in sheltered situations in the southern maritime counties. *James Baxter, Gorddinog Gardens, Llanfairfechan.*

ALPINE GARDEN. — Polygala chamæbuxus purpurea has been in flower most of the winter through; the magenta-purple blossoms are very beautiful. Pulmonaria angustifolia (azurea) has its deep blue-coloured flowers open, also Primula pulcherrima, which blooms here a little too soon, therefore the flowers are liable to damp off. Of the Saxifrages, S. oppositifolia, with purplish-rose-coloured flowers, are very bright. The yellow flowers of Dondia Epipactis are to be seen. Hepaticas, Alyssum, and hardy Cyclamen are bright. Aubrietia "Dr. Mulus" will soon be a mass of flower. Spots in the alpine garden that are to be planted should be indicated by labels, and composts that will be necessary should be put in readiness, so that there need be no delay when planting time arrives. *A. B. Wadds, Paddockhurst, Sussex, March* 13.

ROYAL HORTICULTURAL SOCIETY'S JOURNAL.—It is undoubtedly teasing to a busy man to find the pages uncut. Let him hand the volume to his printer, who will in two minutes put the matter all right by putting the book under his cutting-machine. *W. B. S.*

HIMALAYAN RHODODENDRONS (see pp. 136 and 155).—R. Falconeri is represented here by several established healthy specimens, which receive no protection whatever, and have withstood the frosts of several winters. We have a splendid collection of these Rhododendrons, and they are establishing themselves in different positions. R. argenteum seems to be one of the most tender, and should be protected, or the fine leaves get crippled with the frost and are unsightly all the summer. When planting the large-leaved varieties, such as R. Falconeri, R. Hodgsoni, R. barbatum and others, positions should be selected where they are sheltered from strong winds, but frost does not seem to injure them at all. We have been cutting flowers of R. Nobleanum since the first week in February from plants growing in an exposed position; also R. præcox, which has been, and is at present, a beautiful display of flowers. There need be no timidity in planting these Rhododendrons in sheltered places if the soil is suitable. *A. C. Smith, Lydhurst Gardens, Haywards Heath, Sussex.*

MR. NEWSTEAD.

WE have already alluded to the appointment of Mr. Robert Newstead, the Curator of the Chester Museum, as special lecturer to the University and School of Tropical Medicine, Liverpool, and now have pleasure in presenting his portrait. He will be engaged in giving practical demonstrations and lectures to the students connected with the School of Tropical Medicine, the veterinary department, the agricultural department, and the University. Mr. Newstead, who began his career as a gardener, came to Chester in May, 1886, about a month before the opening of the Grosvenor Museum. The whole of the work of classifying and arranging the extensive collections has been carried out by him, and he has mounted and prepared practically the whole of the objects now in the Museum. Mr. Newstead has, in addition, done much work in connection with the Chester Natural Science Society, and a few years ago he was awarded the Kingsley Memorial Medal; while at the Chester Paxton Society's last exhibition he received the Silver Medal for a large collection of injurious insects. Archæology has also claimed a considerable share of his attention, especially in relation to pre-historic man and the Roman and Saxon periods, and he has frequently contributed to the Archæological Society's journal.

MR. R. NEWSTEAD.

Especially in the departments dealing with general agricultural and horticultural subjects, Mr. Newstead has been closely connected with the work he will now take in hand. A long list of publications has come from his pen, among which the chief are the two elaborate volumes on the scale insects and mealy bugs (Coccidæ), published by the Ray Society. Mr. Newstead has also made the destructive pest, the Black Currant mite, a special feature of his investigations, while another important branch of his work during the last thirty years has been the food of birds in relation to agriculture and horticulture. His records have not been published, but we believe he has made several thousand post-mortem examinations, which are of great interest to scientists. Mr. Newstead was very closely connected with the late Miss Ormerod, and during the last years of her life acted as her assistant. He prepared the exhaustive index to the whole of her publications, which extended over a period of twenty-three years.

To those who have had the pleasure of his companionship in a country ramble, says a Chester paper, his keen observation and his deductive reasoning are a constant source of delight. In the late autumn Mr. Newstead and the writer were passing a stubble field, from which a flock of linnets and finches rose. "Hungry little beasts," remarked the curator, and he was over the wall in a moment, and ranging the field like a pointer quartering partridges. "Aye, this is it," he said, as he returned with a handful of dried stems. "Look at these Charlock-pods. See how exquisitely one side of the pod has been stripped away as if clean cut with a knife. There are no seeds, though you can see the cavities from which they have been extracted. The birds know what these pods contain, and they must have eaten countless thousands of the seeds of this pestilent plant. This is nature's little way of remedying farmers' carelessness and neglect. Next year this field would have borne a splendid crop of Charlock but for the birds."

Obituary.

FARQUHAR MACRAE.—We find in *Horticulture* an announcement of the death, on February 21, of this nurseryman. Like so many other American business men, Macrae was of British origin, having been born in 1844 in Ross-shire. He emigrated in 1869, and rapidly took a prominent position in his vocation. Latterly he had become famous as a Chrysanthemum grower.

EDWARD A. SANDERS.—There has just passed away, in his ninety-third year, one of the best-known men in the county of Devon, Mr. Edward Andrew Sanders, of Stoke House, Exeter, the senior partner of the Exeter Bank (now amalgamated with Smith, Prescott, and Dimsdale). For more than sixty years he took an active part in county affairs, and was Mayor of Exeter over half a century ago. He was a generous patron of horticulture, and at one time a frequent exhibitor at the Exeter flower shows. In 1864 he was President of the Devon and Exeter Horticultural Society, and up to the time of his death was an honoured and beloved President of the Devon and Exeter Gardeners' Association. Mr. Sanders was a fine illustration of the old English gentleman. Incidentally it may be mentioned that he was a brother-in-law of Judge Hughes, the author of *Tom Brown's School Days*. *A. H.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

MARCH 14.—*Present.*—Dr. M. T. Masters, F.R.S., in the chair; Drs. M. Cooke, V.M.H., and H. Müller; Revs. W. Wilks, G. Henslow, and G. Engleheart; Professors G. S. Boulger, and G. F. Scott-Elliott; Messrs. Douglas, Veitch, Elwes, Holmes, Walker, Odell, Baker, Güssow, Bowles, Saunders, Massee, Hooper, and Chittenden (hon. secretary).

Henslow Testimonial.—Dr. MASTERS, on behalf of the committee, after referring to the great interest Prof. Henslow had always taken in the work of this Committee, and after expressing the great regret felt by all on his resignation, presented him with a silver tea and coffee service, bearing the following inscription:—"Presented to Rev. Prof. G. Henslow, M.A., V.M.H., by the members of the Scientific Committee of the Royal Horticultural Society, in grateful remembrance of his valuable services as secretary, and as a token of friendly association during a period of twenty-five years." Professor HENSLOW, in replying, referred briefly to the history of the Committee, with which he had been associated for a quarter of a century, and thanked its members for the support they had always afforded him, and for the mark of their regard with which they had presented him that day.

Pine Bud Moth.—In reply to a request for information concerning this, Mr. SAUNDERS reported as follows: "The shoots of Scotch Fir are attacked by the caterpillars of a small moth belonging to the genus Retinia, which contains several species whose caterpillars live in the shoots of Firs; the commonest species is R. buoliana. When by the appearance of a shoot it is suspected that there is a caterpillar within, it is best to cut it off and burn it. In July, if a number of yellowish-red moths, measuring about an inch across the open wings, appear, it might be worth while to catch them in a butterfly net."

Injured Crinum Bulbs. — Mr. SAUNDERS also reported: "The bulbs were attacked by Dipterous larvæ, probably Lonchæa vaginalis, in large numbers, by the 'bulb mite' Rhizoglyphus echinopus, of which there was one large colony, and by one of the

'Springtails,' Lipura ambulans. It is difficult to say which of these pests began the work of destruction. The grubs of the fly would no doubt be more destructive than the others. The centipedes which were found were probably Lithobius forficatus, which I believe to feed entirely on animal food; they were probably feeding on one more of the pests." A vote of thanks was accorded to Mr. SAUNDERS.

Hybrid Orchid.—Mr. H. VEITCH showed an interesting bigeneric hybrid, now flowering for the first time, Dialælia Veitchi ×, between Diacrium bicornutum and Lælia cinnabarina, which showed clear evidence of the influence of both parents. A Botanical Certificate, proposed by Dr. Masters and seconded by Mr. Elwes, was unanimously awarded.

Scientific Research at Wisley.—Mr. WILKS announced that some experiments had already been commenced in the gardens under the direction of Mr. G. Massee, V.M.H., who had kindly undertaken to superintend them. The experiments are:—1, to ascertain whether the Black Currant bud mite can infect the Hazel and *vice versâ*, and 2, to discover what is the effect on germination of soaking seeds in various solutions.

Formation of Fruit-buds.—A communication concerning the date at which blossom-buds were first formed on fruit-trees, and the conditions influencing their formation, was received from Mr. J. DUNLOP, F.R.H.S. After some discussion, in which the Chairman, Professor HENSLOW, Rev. W. WILKS, Mr. BAKER, and others took part, the matter was referred to the Secretary.

Daffodil Poisoning.—Referring to this matter, which came up at the last meeting, Mr. SAUNDERS said it seemed probable that the crystals of calcium oxalate in the leaves acted as inoculation points, causing a small wound which allowed the entrance of the poisonous substance which is known to occur in the leaves.

Disease of Cucumbers.—Mr. HANS GÜSSOW showed drawings and cultures of a fungus causing disease in Cucumbers. The young fruits are covered with a velvety growth of blackish-green fungal filaments, and it is reported by Prof. Mazé that the leaves also are attacked, forming spots similar to those produced by Cercospora melonis, Cke.; the spores, however, of the fungus are quite different. Mr. Güssow proposes the name Corynespora Mazei for this fungus, establishing a new genus and species (see *Journal of the Royal Agricultural Society*, 65 (1904), p. 270-272, figs.). Mr. Massee and Dr. Cooke both stated that the disease was well known in the country, that the fungus was probably the conidial stage of a higher fungus, placed by British fungologists in the genus Alternaria.

Scale Insects.—Mr. WALKER showed specimens of a scale insect which had occurred outdoors on the following shrubs: Escallonia macrantha, Trachelospermum jasminoides, and Cratægus Pyracantha. Mr. Newstead, who determined the insect to be Lecanium hesperidum, stated in a letter that the insect was very rarely met with outdoors, though known in greenhouses.

Effect of Hail.—Mr. G. WOODWARD, F.R.H.S., of Maidstone, sent branches of fruit-trees showing large, partly healed wounds, many of them 2 inches in length by 1 inch in width, caused by the hailstorm which occurred three and a half years since.

Capnodium on Oranges.—Leaves of Oranges almost covered with Capnodium were received from Lisbon from Lady DENISON-PENDER. This fungus lives on the honeydew secreted by aphis, &c., and may be checked by killing the insects as soon as they appear by spraying with a resin wash.

Diseased Spanish Iris.—Plants of Spanish Iris diseased were received from Mr. LOWE, and Dr. COOKE kindly undertook to examine and report upon them.

Amaryllis Bulbs Diseased.—These, from Mr. BAXTER, were referred to Dr. COOKE and to Mr. SAUNDERS to examine.

"*Stag's Horn*" *Ash.*—Mr. BURBIDGE, V.M.H., sent specimens of contorted and fasciated twigs of this curious and little known variety of Ash. "The tree," says Mr. BURBIDGE, "is propagated by grafting on the common Ash as a stock. It forms a low-spreading tree 15 to 25 feet in height, and as the tip or apex of every twig is contorted and fasciated, it is very peculiar-looking when its leaves fall in autumn and winter. There is a very good example of this 'Stag's Horn' variety on the lawn at Kilmacurragh, co. Wicklow."

NATIONAL SWEET PEA.

WE are requested to announce that the *Sweet Pea Annual* is so far out of print that no copies can be supplied except to those joining the Society. No fewer than ninety new members have paid subscriptions since the commencement of the New Year. The secretary, Mr. Horace J. Wright, 32, Dault Road, Wandsworth, London, will send full particulars of the Society and its work upon application.

BRITISH GARDENERS' ASSOCIATION.

West Hartlepool.—At a meeting held recently at West Hartlepool it was unanimously resolved to form a local branch of the Association, and a committee was elected to carry this resolution into effect, Mr. T. Smith, Grantully Gardens, West Hartlepool, being appointed local secretary.

Beckenham.—A meeting of gardeners, called by Mr. Mark Webster, was held in this town on March 10, Councillor J. Neville in the chair, and was addressed by Mr. W. Watson. It was decided to form a committee and establish a branch of the British Gardeners' Association in the district.

ROYAL DUTCH BULB GROWERS'.

HAARLEM; MARCH 17—21.—The seventy-fifth annual exhibition was opened on Friday, March 17, by the President of the Society, Mr. J. H. Wentholt, and was continued until the 21st.

Many thousands of people visited the exhibition, including a great number who were brought in from Amsterdam by the new electric tramway running from that city. They were brought to and from Haarlem, including entrance to the exhibition, for the sum of eightpence!

The show was held in the Societeit Vereeniging, the largest Club in Haarlem. The large Hall was laid out as a garden, the floor being laid with turf, and having spaces cut out for beds, the paths being made on the natural floor. The various exhibits were placed in the beds, which, with Palms and other decorative plants, made a very fine effect. The gallery, as well as a large room in the Club-house, were also used for staging exhibits.

Medals were presented for competition by the Queen of the Netherlands, the Queen-Mother, the Prince Consort, and a large number of Societies and private individuals.

The classes were over 100 in number, and comprised competitions for Hyacinths, Tulips, Narcissi, Crocuses, Amaryllis, Astilbe, Clivia, Chionodoxa, Convallaria, Cyclamen, Eucharis, Dicentra, Freesias, Fritillarias, Lilies, Galanthus, Gloxinias, Helleborus, Hepaticas, Irises, Tree Pæonies, Callas, Scillas, and a great variety of spring-flowering plants. We cannot specify all the prize-winners.

The HYACINTHS were arranged on staging in a temporary building adjoining the large Hall. These presented a very striking effect, those grown in glasses being exceedingly fine. A very striking feature in this class consisted of thirty pans made up with ten Hyacinths in each pan. These were the finest we have ever seen exhibited in this manner. In this section the principal prizes went to Messrs. ANT. ROOZEN & ZOON, J. H. KERSTEN & Co., W. ROOZEN and J. C. GEHRELS. In many of the classes there was no competition.

The various TULIP classes were well represented, especially by a very fine collection of Darwin varieties. Tulips, both single and double, were very effective. Messrs. VAN WAVEREN & ZOON, J. J. DE LANGEN, VAN SCHAIK, C. G. VAN TUBERGEN, BLOM & ZOON, E. H. KRELAGE & ZOON, and others achieved success in this section.

For NARCISSUS Messrs. J. SCHOEHUIJS was awarded a Silver Medal, and among other prize-winners were HEER J. W. DAUDEY (Spiræas), P. H. TEUNIS, and A. KERS (Clivias), Heer EGGINK and K. STEIJN for Lilies of the Valley.

Next to the Hyacinths we consider that the feature of the show was the AMARYLLIS. There were several exhibitors in the classes for 36 and 24, and there was very keen competition; indeed, the jury had a considerable amount of trouble in deciding the Premier Award.

We must also refer to the splendid miscellaneous varieties of bulbs, such as Iris, Lachenalias, and hardy Orchids. These were well worth a visit alone.

The jury was made up of leading horticulturists from Belgium, Germany, England, and France, with many of the Dutch bulb growers, among whom were:—

President.—A. Truffaut, Paris.

Belgium.—K. J. Kuyk, Mont St. Amand, Ghent; Ch. Pynaert, Ghent.

Germany.—Fr. Benary, Commerzienrat, Erfurt; M. Buchner, Munich; C. Kommer, Bremen; Aug. Siebert, Frankfurt-on-Maine; W. Swoboda, Berlin.

England.—P. Rud. Barr, London; Herbert J. Cutbush, London; George Gordon, London; R. Wilson Ker, Liverpool; Alfred H. Pearson, Lowdham; John Pope, Birmingham; Walter T. Ware, Bath.

France.—Henri Martinet, Paris; Albert Truffaut, Versailles; Ph. Levêque de Vilmorin, Paris.

The foreign visitors and members of the Press were treated with the greatest kindness and hospitality. Banquets, receptions, concerts, and other entertainments were offered to the guests; and an official welcome was tendered them by the Burgomaster, Mr. J. W. G. Boreel van Hogelanden.

ROYAL BOTANIC.

MARCH 22.—The first of the Society's shows for the present season took place on the above date, a bright display of flowers and plants being arranged in the corridor and in the conservatory.

Messrs. J. HILL & SON, Lower Edmonton, staged a splendid group of Ferns. Among the collection we noticed Polypodium aureum giganteum, Nephrolepis exaltata, Dicksonia Scheidei, Pellea robusta, Platyceriums, Brainea insignis, Woodwardia orientalis, &c. Osmunda Hilli, a variety of the North American O. gracilis, is worthy of mention (Gold Medal).

Mr. G. REUTHE, of Keston, put up a very bright group of hardy spring flowers (Silver-gilt Medal).

Mr. J. MAY, Gordon Nursery, Twickenham, staged a splendid group of about 125 plants of Cyclamen. The colours of the flowers were bright and varied, and the plants themselves of sturdy growth (Large Silver-gilt Medal).

Messrs. AMBROSE & SON, Cheshunt, had Daffodils and Carnations. Among the latter the variety Flamingo was awarded a Certificate of Merit (Bronze Medal).

Miss ADAMSON, South Villa, Regent's Park (gr., Mr. Kelf), put up a good group of flowering and foliage plants, Cinerarias, Daffodils, Hyacinths, Tulips, &c. (Large Silver-gilt Medal).

Messrs. J. LAING & SONS, Forest Hill, showed Begonias and Anthuriums arranged with Palms and Ferns (Bronze Medal).

Mr. S. MORTIMER, Farnham, Surrey, staged a fine group of a clove-scented Stock named "All-the-Year-Round," to which the Committee awarded a First-class Certificate (Large Silver Medal).

Mr. J. BOX, West Wickham, had a pleasing group containing plants of Begonia Gloire de Sceaux and of alpine plants in flower (Silver Medal).

Messrs. T. S. WARE, Ltd., Feltham, put up a large group of Daffodils, hardy Primroses and other spring flowers, including Conandron ramondioides that received a first-class certificate (Large Silver-Gilt Medal).

Mr. G. H. SAGE, Richmond, showed flower displayers and horticultural sundries.

Mr. J. WILLIAMS, Oxford Road, Ealing, had some pretty flower-holders of various patterns.

GARDENERS' DEBATING SOCIETIES.

CARDIFF GARDENERS'.—The usual fortnightly meet- was held at the Sandringham Hotel, Cardiff, on Tuesday, March 7, Mr. Tom Clarke presiding. Mr. R. Mayne, Park Place, Cardiff, delivered a very instructive and practical lecture on "Pot Strawberries." The lecturer explained in detail the modes of propagation, and varieties suitable for the purpose: also the proper treatment necessary to maintain a succession of fruit. Mr. Collier opened a discussion. The Chairman announced that the nineteeth annual General Meeting will take place on March 21st next.

BRISTOL AND DISTRICT GARDENERS'.—A meeting of this Association was held at St. John's Rooms on Thursday, March 13, Mr. Garnish presiding. The lecturer for the evening was Mr. Cane, gardener to Drs. R. and W. Eager, Northwoods, the subject being "Cyclamen." The lecturer recommended growing plants from seed each year, and showed how they could be had in flower from November to May. Details were given on sowing, suitable composts, potting, and on general treatment for the whole season. A discussion followed. The competition for three plants of Cyclamen was keen, the 1st prize being awarded Drs. R. and W. Eager (gr., Mr. Cane). The next meeting is an exchange visit from the Reading Association, when Mr. Winsor will lecture on "Sprays and Buttonholes."

HEADLEY GARDENERS'.—A lecture illustrated by lantern-slides was given on Wednesday, March 14, by Mr. Bunyard on "Birds of the Garden," Mr. J. Murray presiding. The lecturer, before describing the various birds in detail, gave methods of preventing the increase of birds generally, and also methods of attracting them. To attract useful birds, it was necessary to provide nesting-boxes, about 9 inches square and 5 inches deep, with a sloping roof to keep out the rain. The lecturer deprecated the so-called sparrow clubs as upsetting the balance of Nature, and proved that though the sparrows did much mischief in destroying buds, they destroyed thousands of injurious insects, and the seeds of noxious weeds. Even the bullfinch, the most destructive of all garden birds, was partially insectivorous. As examples of birds to be especially encouraged, the lecturer mentioned the missel-thrush, robin, blue-tit, fly-catcher, swallow, and starling. Some very interesting specimens of nests and eggs were exhibited. *H. A.*

ADDLESTONE, CHERTSEY, AND OTTERSHAW GARDENERS'.—A meeting of the above Association was held at the Village Hall on Tuesday, March 7. The President, H. Cobbett, Esq., occupied the chair. The subject of the lecture was "The St. Louis Exhibition." The lecturer, W. F. Reid, Esq., F.I.C., F.C.S., gave a most interesting discourse, which was splendidly illustrated by lantern slides. The principal features of the Exhibition were explained and pictorially represented, especially those features that were of horticultural interest. *T. S., Addlestone.*

DEVON AND EXETER GARDENERS'.—At the fortnightly meeting of the above Society held in the Guildhall, Exeter, Mr. Fry, Dulford House Gardens, Cullompton, gave an address on the "Cultivation of Apples and Pears." The lecturer dealt with double grafting of Pears, with summer pruning of fruit trees, which should be performed after August, and with various remedies for destroying insect pests.

CROYDON AND DISTRICT HORTICULTURAL.—The members of the above Society assembled on Tuesday, March 7, to hear an illustrated lecture from Mr. M. E. Mills, who contributed an interesting account of "Coombe House and its Gardens." In the extensive grounds are many features worthy of note, especially the old Cedars and Beeches, and a very old well of great depth used by the pilgrims years ago when passing.

READING AND DISTRICT GARDENERS'.—At the last fortnightly meeting of the above Association Mr. Barks, the representative of the Redhill and Reigate Association, read a paper on "Vegetables for Home Consumption," Mr. Leonard Sutton presided. The culture of the best sorts and varieties of vegetables was clearly dealt with, after which a good discussion followed. There were interesting exhibits displayed, including a curious specimen of Kale bearing the name of "Perennial Daubenton Kale," and some excellent blooms of Camellia reticulata.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.—At the annual general meeting of the members of the above Society it was decided to add mutual improvement meetings to the programme of the Society, which has hitherto been content to devote its energies to the holding of an annual autumn exhibition. The Society is one of the oldest in the London district, having been inaugurated close on fifty years ago, and it has continued its work with varying degrees of success ever since. The first meeting of the new movement was held in the hall of the British Workman's Institute, Ostade Road, Upper Tulse Hill, S.W., on Tuesday, March 14, the President, the Rev. C. S. Nicholl, M.A., in the chair, when Mr. J. Gregory, of Croydon, gave an interesting and instructive limelight lecture, entitled "Some Gardens I have Visited," which was very much appreciated by a large audience. Mr. Gregory supplemented his lecture by giving the members of the Society some good advice out of the plenitude of his experience *re* the successful management of the new movement. The President was supported by Mr. Wm. Roupell (vice-president), Mr. Lake, and others.

LANCASTER AND DISTRICT HORTICULTURAL IMPROVEMENT.—This Society has been successfully inaugurated, and the first lecture was given on Saturday evening in the Storey Institute before a large attendance, by Mr. Chas. Paul, of the Royal Botanical Gardens, Manchester, and Secretary of the Manchester Horticultural Improvement Society, his subject being "The Vegetable Covering of the Earth." The Mayor of Lancaster, Councillor Heald, presided. The many excellent lantern slides, by which it was illustrated, were much appreciated. Lord Ashton has accepted the presidency of the Society, and Mr. H. L. Storey High Sheriff, the vice-presidency. Mr. W. Shaw (Ryelands) has been appointed chairman of committee. The hon. secretaries are Messrs. J. W. Pring (New Street, Lancaster), and W. H. Shaw (Westfield); and the hon. treasurer, Mr. J. G. Shand. About 100 members have been enrolled. The Corporation have granted the lecture theatre at the Storey Institute for the use of the meetings, which will be held fortnightly during the winter months. The summer programme will include visits to places of special interest to horticulturists, and for cottagers and amateurs it is proposed to hold demonstrations at the various allotments, with addresses on the phases of gardening applicable to their needs.

NEW INVENTION.

A TURF-CUTTING MACHINE.

THE illustration at fig. 78 represents the Optimus Turf Cutter, a patent machine for cutting turf. The cutter comprises a handle or frame, having towards the front a wheel adapted to run upon the surface of the grass, and having behind it an adjustable cutting blade, which, when pushed forward, is said to effectually make the desired division of the turf. Messrs. Corry & Co., Ltd., Finsbury Street, London, E.C., to whom we are indebted for the illustration, state that the knife can be regulated by screw-action to suit any required depth, and also to suit the convenience of the operator. It can also be converted into an edging machine for grass verges, by simply removing the knife and fixing it to the side-arm provided for the purpose.

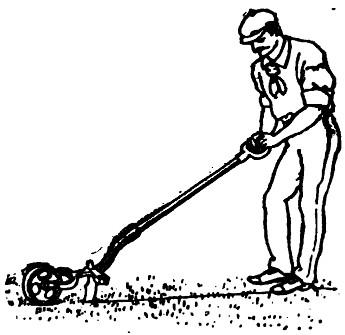


FIG. 78.—THE OPTIMUS TURF CUTTER.

MARKETS.

COVENT GARDEN, *March* 22.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia Drummondi, per doz.	18 0–24 0	Dracænas, p. doz.	9 0–24 0
— armata, per doz.	12 0–18 0	Daffodils, various, per dozen	4 0– 6 0
Aralia Sieboldi, doz.	4 0– 6 0	Deutzia gracilis, per dozen	8 0–10 0
Araucaria excelsa, per dozen	18 0–30 0	Ericas, per doz.	15 0–24 0
Aspidistras, green, per doz.	18 0–24 0	Euonymus, dozen	4 0– 9 0
— variegated, per doz.	30 0–42 0	Ferns, in thumbs, per 100	8 0 12 0
Azalea indica, p. doz.	15 0–30 0	— in 48's, p. doz.	4 0–10 0
— mollis, p. doz.	24 0–42 0	— in 32's, p. doz.	9 0–18 0
Asparagus plumosus nanus, per doz.	9 0–12 0	Ficus elastica, p. doz.	9 0 12 0
— Sprengeri, doz.	8 0–12 0	— repens, per doz.	6 0– 9 0
— tenuissimus per doz.	8 0–10 0	Genistas, per doz.	6 0–10 0
Begonia Gloire de Lorraine, doz.	12 0–18 0	Hydrangea, Thos. Hogg, per. doz.	9 0–12 0
Boronia megastigma, p. doz.	12 0–24 0	Hortensia, p. doz.	12 0 —
— heterophylla.	18 0–24 0	pot), per doz.	6 0– 9 0
Calla æthiopica, per doz.	5 0– 6 0	Kentia Belmoreana, per doz.	12 0–18 0
Cinerarias, per dozen	6 0–10 0	— Fosteriana, p. doz.	12 0–21 0
Crotons, per doz.	12 0–30 0	Latania borbonica, per doz.	9 0 15 0
Cocos Weddelliana, per doz.	18 0–30 0	Marguerites, doz.	6 0– 9 0
Cyclamen persicum, per doz.	9 0–18 0	Mignonette, per dozen	6 0–10 0
Cyperus alternifolius, p. doz.	3 0– 5 0	Primula sinensis, per doz.	4 0– 6 0
Cyperus laxus, dz.	3 0– 4 0	— obconica, per dozen	3 0– 5 0
		Spiræa japonica, per doz.	6 0– 9 0
		Tulips, in boxes, each	1 6– 2 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each	0 9– 1 0	Galax leaves (American), per dozen bunches.	2 6 —
— — medium, each	0 4– 0 6	Ivy-leaves, bronze	1 6– 2 0
— — short sprays per bunch	1 0– 2 6	— long trails, per bundle	1 0– 2 0
— Sprengeri	0 9– 1 6	— short green, per dozen bunches	1 0– 1 6
— tenuissimus	0 9– 1 0	Myrtle, doz. bun.	3 0– 4 0
Adiantum cuneatum, doz. bun.	6 0– 9 0	Smilax, p. dozen trails	4 0– 6 0
Croton leaves, doz.	1 0 2 0	Hardy foliage (various), per dozen bunches	3 0– 6 0
Cycas leaves, each	1 0– 1 6		
Fern, English, p. dozen bunches	3 0– 4 0		

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, p. doz. bunches, pink	2 0– 3 0	Marguerites, per doz. bunches.	2 0– 3 0
— fulgens	2 0– 3 0	Mimosa (Acacia), per basket	8 0–10 0
Carnations, per doz. bunches.	9 0–12 0	Narcissus, per basket	4 0– 8 0
Fern, French (Asplenium adiantum nigrum), p. doz. bunches	6 0 —	Ranunculus, per doz. bunches.	9 0–12 0
Freesias, dz. bun.	2 0– 4 0	Violets, blue, per doz. bunches.	1 0 2 0
Lilac, per bunch.	2 6– 3 6	— Parma, per large bunch	2 6– 3 6

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Azalea Fielderi, per doz. bun.	2 6– 3 0	Lilium longiflorum	2 6– 4 0
— mollis, per dz. bunches	9 0–12 0	— tigrinum	2 0– 2 6
Calla æthiopica, per doz. blooms	3 0– 4 0	Lily of the Valley, per dozen bunches	8 0–18 0
Camellias, per dz. blooms	1 6– 2 0	Marguerites, per doz. bunches, white	3 0– 4 0
Carnations, p. dz. blooms, best American vars.	2 6– 5 0	— yellow	3 0– 5 0
— smaller do.	1 0– 2 0	Narcissus, p. doz. bunches, gloriosus	1 6– 2 6
— Malmaisons	10 0–12 0	— paper-white	1 6– 2 6
Cattleya, per doz. blooms	10 0–12 0	— Pheasant's Eye	2 0– 3 0
Cypripedium insigne, 12 blooms	2 6– 3 6	— Soleil d'Or	1 6– 2 0
Daffodils, per dz. bunch., single yellow	2 0– 5 0	Odontoglossum crispum, pr. dz. blooms	2 0– 3 0
— double	3 0– 5 0	Pelargoniums, p. doz. bnchs.	
— Emperor	4 0– 6 0	— (Zonal) double scarlet	3 0– 6 0
— Golden Spur	3 0– 5 0	— salmon and pink	4 0– 6 0
— Henry Irving	5 0– 6 0	Roses, per dozen blooms, Niphetos,	2 0– 3 0
— bicolor	4 0– 6 0	— Bridesmaid	3 0– 5 0
— Sir Watkin	3 0– 5 0	— Kaiserin A. Victoria	5 0– 6 0
Dendrobium nobile, doz. blooms	1 6– 2 0	— General Jacqueminot	1 6– 2 6
— Wardianum	1 6– 2 6	— C. Mermet	3 0– 4 0
Eucharis grandiflora, per dozen blooms	2 0– 3 0	— Liberty	3 0– 5 0
Euphorbia jacquiniæflora, bunch	1 6– 2 6	— Sunrise	1 6– 2 6
Gardenias, per dz. blooms	1 0 2 0	Tuberoses, per dozen blooms	0 3– 0 6
Iris Germanica, p. bunch	1 0 —	Tulips, doz. bun.	6 0–12 0
Lilac (English forced), per bun.	2 0– 3 0	— special double varieties	18 0–24 0
Lilium auratum, per bunch	2 6– 3 0	Violets, blue, English, per dz. bunches	1 6– 4 0
— lancifolium, rubrum and album	2 6– 3 6		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen	3 0– 4 6	Leeks, doz. bndls.	1 6– 2 0
— Jerusalem, p. sieve	1 0 —	Lettuces, Cabbage, per dozen	1 0– 1 3
Asparagus, bunch	5 0– 6 0	Mushrooms (house) per lb.	0 10 —
— Giant	20 0–30 0	Onions, pickling, per sieve	5 0– 6 0
— Paris Green	5 3 —	— Egyptian, cwt.	14 0–14 6
— Spanish, bunch	1 9 —	— English, cwt.	17 0 —
— Sprue, p. doz.	10 0 —	— Dutch, p. bag,	14 6 —
Beans, dwf., p. lb.	1 3 —	— Valencia, case	14 6 —
— Madeira, per basket	3 0– 3 6	Parsley, 12 bunch.	1 6– 2 0
Beetroot, bushel	1 6 —	Parsnips, per bag	3 0– 3 6
Broccoli, Sprouting, bag	1 6– 2 0	Peas, French, pkt.	0 6 —
Brussels-Sprouts, sieve	0 6– 1 0	— Frame, per lb.	3 0 —
Cabbages, p. bag	1 6 —	— Flats	8 6 —
Carrots, 12 bunch.	2 0 —	Potatos, per ton	50 0–90 0
— bag	2 3– 3 6	— Frame, lb.	0 5–0 6½
Cauliflowers, doz.	0 9– 1 6	— Teneriffe, cwt.	12 0–16 0
— Cherbourg dz.	0 9– 1 0	Radishes, 12 bnch.	0 6 –1 0
— St. Malo, doz.	1 0– 1 6	Rhubarb, York, dz.	0 8–0 10
Celery, per dozen bunches	12 0 —	Salad, small punnets, per doz	0 9 —
Cress, doz. pun.	0 9 —	Savoys, per tally	3 0– 4 0
Cucumbers, doz.	2 6– 5 0	Seakale, per doz.	10 0–12 0
Curled Kale, bush.	1 0 —	Shallots, p. sieve	7 0 —
Endive, per doz.	2 0– 2 6	Spinach, bush	2 6– 3 0
Garlic, per lb.	0 3– 0 4	Tomatos, bundle	8 0–12 0
Greens, bushel	1 0 —	— English, p. lb.	1 3 —
Horseradish, foreign, p. bunch	0 8– 0 9	Turnips per doz.	1 6 —
Mint, per dozen	3 0– 5 0	— per bag	1 6 —
		Turnip-tops, bag	0 9 1 6
		Watercress, per doz bunches.	0 6 0 7

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, bushel	3 0– 8 0	Grape-Fruit, per case	14 0 —
— English, per sieve or half bushel	1 6– 3 0	Grapes, Gros Colmar, per lb.	2 9– 3 6
— — per barrel.	12 0–20 0	— Alicante, per lb.	1 6– 3 0
— Newtown Pippin	25 0–50 0	— Almeria, doz. lb.	5 0– 8 0
— — per case	20 0–25 0	Lemons, per case	8 0–18 0
Bananas, bunch	7 0–12 0	Oranges, per case	8 0–50 0
— loose, dozen	1 0– 1 6	— Blood	8 0–15 0
Chestnuts, p. bag	14 0 —	— Jaffa, per box	10 0–15 0
Cobnuts per lb.	0 6½ —	— Seville	6 0– 6 6
Cranberries, per box	13 0 —	Pines, each	2 0– 4 0
Custard-Apples, per dozen	5 0– 8 0	Strawberries, A., per lb.	5 0– 8 0
Figs, per dozen	15 0–24 0	— — B., per lb.	2 0– 4 0

REMARKS.—The Alicante Grapes are from France. The Cape Grapes, both red and white varieties, are "Hanepoots"; they are known in the market as "Honey Pots." They command from 10*s.* to 15*s.* per case of from 10 to 16 lb. weight. Cape Plums, 5*s.* to 7*s.* per case; Peaches, 3*s.* to 6*s.* ditto; Nectarines, 7*s.* to 10*s.* ditto; Pears, various sorts, 5*s.* to 8*s.* ditto; cases of French Apples, 6*s.* to 11*s.* each; Australian (Victoria) ditto, 12*s.* to 18*s.* per case; these latter are not of good quality. Cauliflowers in variety are now to be had, including those from Kent, Cherbourg, St. Malo, and Cornwall.

POTATOS.

Dunbars, 80*s.* to 90*s.*; various, home-grown, 50*s.* to 70*s.* per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

WITH brighter weather the trade has improved somewhat; supplies are still over-plentiful. In flowering plants Indian Azaleas sell for rather better prices. Best Cyclamen also sell well. Mignonette of good quality is seen from several growers. Supplies of Genistas are over-plentiful, but best plants maintain good prices. Cinerarias are remarkably good in quality, but they do not sell readily. Marguerites are plentiful, some extra fine plants of these are obtainable. Plants of zonal Pelargonium "F. V. Raspail" are good, and realise from 6*s.* to 8*s.* per dozen; some of the variety King of Denmark are seen, but these at present are not very good. Hydrangea Hortensia and the variety Thomas Hogg are seen in dwarf plants, the first-named being well coloured considering the earliness of the season. Intermediate stocks are already coming in, but the white variety only is seen at present; these are good plants and command 5*s.* per dozen. Well-flowered plants of Choisya ternata are seen. Erica Willmoreana and its white variety are remarkably well flowered this season; E. persoluta alba and E. Cavendishi are also of good quality. Acacias are almost over. Boronias are still seen. Hyacinths, especially the pink variety, are of good quality. Daffodils do not sell very readily. Some fairly good plants of Clematis are in flower. The hardy deciduous flowering shrubs do not sell readily. Lilacs, Laburnums, Prunus triloba, and Azalea mollis are seen; the latter sell fairly well. Spiræas are now plentiful, and Lily of the Valley in pots and in boxes, with good foliage, may be had at moderate prices. All kinds of foliage plants are plentiful, with little variation in prices. Hardy plant roots are now a feature—Pansies (for which 3*s.* per box containing two dozen is made for best quality plants), Polyanthus, Primroses, Daisies, &c. Spring bedding plants in store boxes are arriving. Lobelia, Marguerites, Fuchsias, Zonal Pelargoniums, and Calceolarias may all be had at low prices.

CUT FLOWERS.

Prices generally are if anything lower. Roses are over-plentiful, and cheaper now than they will be later on. Carnations are also abundant; there are some good flowers of the old favourite variety Miss Joliffe to be had. In American varieties, Norway (a fine white), Alpine Glow (blush pink), Floriana (a deeper shade), Adonis (scarlet), and Enchantress are still good. Good pink Malmaisons are obtainable. Lilium auratum is now plentiful, while L. longiflorum is to be had again at normal prices. Callas are very cheap. Tulips continue abundant. Some good double varieties are seen. Supplies of Narcissus of all sorts are over-plentiful; best quality bicolors probably command highest prices. Gardenias are over-plentiful, and are offered at low prices at close of market. Eucharis are also abundant. Lily of the Valley is again down in price, supplies being more than equal to all demands. Violets are also very plentiful. Anemones in several sorts are very good. French Ranunculus are bright, and maintain good prices. The ordinary Mimosa is now nearly over, but other sorts of Acacia are coming in. Large branches of Double Peaches, Almonds, and other deciduous flowering shrubs are seen. To give a correct price list is most difficult, the fluctuations in prices being so great. *A. H., Covent Garden, March* 22.

ANSWERS TO CORRESPONDENTS.

BEECH BARK: *J. B. P.* The bark is infested with the Beech-coccus (Cryptococcus fagi), an insect allied to the mealy-bug. This coccid feeds exclusively upon the Beech, selecting the tree trunk, and occasionally ascends to the main branches. It will in time cause the bark to peel off, and the tree to decay and die. The young larvæ hatch about September, and although active, many never see daylight, but work their way under the old felted sacs and the dead bodies of their parents. They insert their beak into the hard bark sufficiently far to enable the insects to suck up the juices of the tree. The trunks of specimen or ornamental trees that are attacked by this pest should be thoroughly scrubbed with a mixture of soft-soap and water in the proportion of 8 oz. of the former to 1 gallon of water. In all cases it is best to dissolve the soap by boiling it in a quart of water, afterwards adding the full quantity. If it is found impossible to scrub the bark, spray with a mixture of paraffin, soft-soap and water kept well stirred. [See also p. 185.]

BEGONIA GLOIRE DE LORRAINE: *A. B. B.* You do not say if your propagating-bed is provided with glass lights. If it is not you had better place a shallow frame with lights on the bed, or make a rough temporary frame with narrow boards, and lay a light on this. Your bottom-heat of 70° is rather low, but the cuttings will probably root satisfactorily in that temperature. You will require quite five dozen good plants in 5-inch pots for stock. Fibre will be better than sand for making the cutting-bed. Young shoots will already have started to grow at the base of the old plants, and when they are about an inch and a half long, take them off and dibble them into the fibre in the cutting-frame and water them. You will have to take several batches of cuttings to get one thousand plants, and cuttings rooted as late as the end of May will make useful plants. As soon as the cuttings have rooted pot them into small pots, using a compost of two parts sandy loam and one part leaf-soil, peat, or fibre. Keep the atmosphere of the house in a moist condition, and shade the young plants from direct sunshine. When the plants have become well established shift them into 5-inch pots.

CLIVIA CROSSED WITH HIPPEASTRUM: *T. P.* The flowers you send are specially fine in colour, and seem to show variation in this respect as described by you. It would be very interesting to try to cross them again as you suggest.

CONIFERS: *E. C.* (1) The report of the Conifer Conference was printed in the *Journal of the Royal Horticultural Society*. Write to the Secretary, R.H.S. Hall, Vincent Square, Westminster, who will inform you if copies may still be purchased; (2), *A Manual of the Coniferæ*, published by Messrs. Jas. Veitch & Sons, Ltd., Royal Exotic Nurseries, Chelsea.

DAHLIA SOCIETY: *Eight Years' Subscriber*. The Secretary is Mr. F. J. Bateman, 34, Clarendon Road, Hornsey, N.

FLOWERS FOR TRAVELLING: *N. of D.* You are quite right in your suggestion respecting cultivation. If the flowers are produced in as low a temperature as is compatible with the proper growth of the plants, they will travel better and last longer after being cut than they would if grown in a greater degree of heat. In addition to the plants mentioned, you might try Freesias, Mignonette, double-flowered Primula sinensis, double-flowered Stocks, Streptocarpus, Anemones, Clivia miniata, Richardias, all the species of Acacia, Tuberoses, Roman Hyacinths, Carnations (one of the very best winter flowers for your purpose), Camellias, Eucharis, Gardenias, numberless varieties of Orchids, particularly of Cypripediums and Dendrobiums, Violets, Bouvardias, Hippeastrums, Roses, &c.

FRUITS FOR MARKET: *Old Reader.* We cannot undertake the responsibility of recommending which of the new varieties of Apples, Pears, and Plums are most suitable for market culture. You even mention those introduced in 1904; but a little reflection should convince you that it is impossible for some years after distribution to determine whether the growth of the tree and its cropping qualities will be such in a given locality as to warrant the planting of trees on a large scale even when the questions of appearance, keeping qualities, and flavour of the fruit have been settled. During the past few years there have not been many new Pears or Plums introduced that are likely materially to affect market-growers, but of the large number of new Apples, some ought certainly to be valuable for their purpose. You should procure one tree of each variety, and after trial in your own district you will be more likely to avoid making costly mistakes than you would be if guided by experience obtained elsewhere. The best of the older varieties for general planting were well brought out in our Apple census, published in the issues of the *Gardeners' Chronicle* for October 29 and November 5, 1904.

LIME-TREE: *F. R.* The pieces you send are dead. The bark is covered with a small alga, but this has not been the cause of death. Unless you can furnish us with more particulars we cannot assist you. The trouble is probably to be found at the roots.

NAMES OF FRUITS: *I. J. E.* 1, Catshead; 2, Old Nonpareil. The Pears are Winter Nelis.—*F. F.* The Apple is Graham or Kentish Deux-Ans.

NAMES OF PLANTS: *F. E. G.* Odontoglossum crispum, spotted variety, of slightly better value than the ordinary form, but of no great merit in its class unless it improves under cultivation. — *A. H. P.* Daphne Laureola (Spurge Laurel).—*T. G.* Reinwardtia trigyna, sometimes called Linum.—*A. W. G.* 1, Ophrys fucifera or a near ally; 2, Alonsoa incisifolia; 3, Santolina incana. — *Anxious.* 1, Crinum amabile angustum; 2, Xylophylla latifolia; 3, cannot be determined from the specimen received; 4, Sericographis (Jacobinia) Ghiesbreghtiana —*G. G.* Odontoglossum × Adrianæ, a very good variety.—*C. E. A.* 1, Cypripedium × siamense, first imported as a natural hybrid. *W. G. S., Lancaster.* Cattleya Schröderæ.—*A. B.* 1, Cypripedium × Charles Canham; 2, Cypripedium villosum, specially good variety.

NARCISSUS "STELLA" AND "FIGARO": *A. Willis Can.* These are tall-growing varieties, their normal height when properly grown being 18 to 21 inches, but in pots they would be a little less tall. If you have seen them as dwarf as 6 inches, it could only be owing to bad culture or the result of employing very weak bulbs.

PICEA: *F. S.* The specimen is a very fine one of Abies Webbiana. The other plant is Podocarpus chilina.

PRIMULA MEGASEÆFOLIA: *A.* The flowers you sent us are correctly described as belonging to this species. The reason for your ill success in cultivating the plants is, we think, due to their having been grown in a greenhouse. The species is a hardy one in most districts, and if you keep the plants in pots they should be placed in a cold frame or house, and in a position close to the roof-glass. An excellent illustration of Primula megaseæfolia was given in the *Gardeners' Chronicle* for April 6, 1901, p. 223.

ROSES: *H. Y.* If liquid cow manure was applied every week over a period of some months, it is very likely that a coating was deposited over the surface of the soil that would almost prevent any aëration at all. When such manure-water is applied so frequently and over so long a period, the surface-soil should be removed occasionally or at least stirred.

SHRUBS: *Yew Tree, North-west Staffordshire.* — Shrubs always look best in groups or masses—*i.e.*, each sort being represented by three or more plants in a group, as the good qualities of each are then seen to the best advantage. The following flowering shrubs are likely to succeed in your district. We have enumerated suitable evergreens, and must defer a list of deciduous species until our next issue. All points considered, Berberis stenophylla is perhaps the best hardy yellow-flowered evergreen shrub. It is of free growth, graceful habit, and is unusually floriferous; the flowers are small, rich yellow, borne on the undersides of the long arching shoots in April. B. Darwinii is of sturdy growth, and bears orange-yellow flowers freely. Buddleia globosa, the orange ball-tree from Chili, not only grows freely, but flowers abundantly in the midlands if planted in a position exposed to the sun, but one protected from cutting winds; its orange-coloured flowers are borne in round heads in May. In severe winters it may be killed to the ground. The common white Broom (Cytisus albus), yellow Broom (C. scoparius), C. s. Andreanus, and the hybrid named præcox cover themselves with flowers each spring. Hypericum oblongifolium, a late, free - flowering species, is of excellent growth, perfectly hardy, and very pretty when displaying its substantial yellow flowers. Leycesteria formosa, from the Himalayas, bears a great number of white flowers shaded with purple, in long pendulous racemes, in summer, and these are succeeded by attractive purple berries in autumn; hard pruning should be practised with this so-called Himalayan Honeysuckle. Ligustrum sinense represents the best of the Japanese Privets, and as its white flowers appear in loose terminal panicles towards autumn (a time when flowers in the shrubbery are on the wane) it has great value; it is sub-evergreen, and succeeds in poor soil. The New Zealand Daisy Bush (Olearia Haastii) is one of the most reliable of small-growing evergreens; it has light-green, Box-like leaves, and produces great clusters of small white flowers towards the apex of the branches in summer. Skimmia japonica, with its shining green foliage, looks well all the year round, and when displaying its racemes of white, sweet-scented flowers at about the end of March, it is particularly pleasing. This is one of the best of small-growing evergreens for the Midland Counties, and a first-rate subject for murky atmospheres. For planting on hard, dry, hungry soils few subjects create a more gorgeous effect than Ulex europæus fl.-pl. (Double Gorse). It is nearly always in blossom. In well-drained soil free from lime hybrid Rhododendrons will flourish amazingly in the same district, as may be seen in the Botanical Gardens at Edgbaston. Another shrub, Pieris (Andromeda) floribunda, also grows freely and produces enormous quantities of drooping Lily-of-the-Valley-like flowers when planted in peaty soil and screened from biting winds. Cratægus pyracantha (Evergreen Firethorn) should be included by reason of the abundance of beautiful orange-red berries borne in autumn. It is a grand shrub in the neighbourhood of Birmingham.

SOIL: *Grimsby.* The sample you send appears to be of a desirable quality. We cannot undertake to analyse soil, but if you are a Fellow of the Royal Horticultural Society you can send it to the Society's chemist and have it analysed on payment of a small fee.

VIOLET-LEAVES: *J. C.* The compost you use appears from the sample sent to be excellent in every respect. No fungus disease is present, and we think your inference may be correct in attributing the condition of the plants to the presence of peat-manure in the soil. The peat absorbs a great amount of ammoniacal liquid whilst in the stable.

COMMUNICATIONS RECEIVED.—Dr. Macwes—H. C.—G. P. Prof. Maiden, Sydney—W. W.—S. W. F.—C. S. B., Ramsgate—G. W.—R. N.—W. E. G.—F. J. C.—Messrs. Pulham & Son—J. F.—C. G.—W. L.—A. S. R.-J. C. W. & Son—W. H. C.—J. L.—W. B. J.—J. A. R.—C. W. M.—W. M.—Chloris—A Constant Reader—W. R. C.—G. W. R.—F. Street—G. H. H. W. (next week)—J. F. McL.—C S.—W. J. Bean—F. J—S. G. S.—F. M.—J. D.—R. G., Rockhurst (next week)—R. P.—J. C.—T. H.—W. H. Y.—J. R.—J. B.—G. A. H.

THE

Gardeners' Chronicle

No. 953.—*SATURDAY, April* 1, 1905.

CONTENTS.

Alpine garden, the ... 197
Apple Lord Burghley . 202
Apple stocks from cuttings 203
Arabis alpina, an interesting form of ... 198
Camellias in the open 203
Cedar-trees, some large 202
Cucumbers without fertilisation 201
Cypripedium × Haywoodianum 195
Drip, an appliance to prevent 196
Heliamphora nutans . 194
Kew gardeners, half-holiday for 200
Meconopsis integrifolia 200
Nurseryman, an old-time 201
Oaks, North American 194
Odontoglossum × Lawrenceanum 197
Peach-trees, manure for 202
Pentstemons, the culture of 195
Potatos, planting of ... 201
Ripersia terrestris ... 202
Roses, pruning ... 203
Seed trade, the... ... 197
Shades for fruit walls 196
Shelter for plants .. 193
Shrubs for Midland counties 208
Societies—
  British Gardeners'... 206
  Linnean 206
  Royal Agricultural 200
  Royal Hort. ... 200, 204
  Uitenhage (S. Africa) Horticultural ... 206
Tomato disease ... 201
Trees and Shrubs—
  Lonicera fragrantissima 195
  Sapindus marginatus 195
Trees, the timber value of exotic 202
Trees, transplanting... 203
Varieties and degeneration 200
Week's work, the—
  Flower garden, the 198
  Fruits under glass... 199
  Hardy fruit garden 199
  Kitchen garden, the 199
  Orchid houses, the 198
  Plants under glass... 198

ILLUSTRATIONS.

Cypripedium × Haywoodianum 195
Drip, an appliance to prevent 196
Heliamphora nutans, an insectivorous plant ... 194
Odontoglossum × Lawrenceanum, a heavily marked variety 197
Onions, a bed of, grown from transplanted seedlings 203
View in the Arnold Arboretum, Cambridge, Mass., U.S.A. (Supplementary Illustration)
Wall-shade for fruit trees 196

SHELTER.

It may be taken as a fixed law in gardening that continuous success only comes to the man who knows the ways of his plants and cultivates them accordingly, giving them sunshine or shade, moist soil or dry soil, just as they may require. In laying out a garden a very important point, and one with which neither artistic effect nor financial considerations need necessarily clash, is to ensure adequate shelter for the plants that want it, and to know those from which it may safely be withheld. Before, however, our knowledge of this subject can advance beyond the empirical stage, it is necessary to examine in some detail the effects produced by shelter.

I shall consider the question in its two aspects, as it affects the soil and as it affects the plant, and it will be most convenient for my present purpose to begin with the soil.

Plant growth does not usually take place below 33° or 34°, and the best temperature for our common outdoor plants is from 70° to 80° or 90°. It is therefore obviously desirable that the soil should be warmed up as quickly as possible after we want the plants to move. For open-air cultivation the most important source of heat is the sun, which either directly, or indirectly by warm winds or showers, furnishes the gardener with practically all the heat he gets. Uncertain as is the supply, it is beyond our power to increase it, nor can we entirely prevent the great amount of loss that invariably goes on, but by good management the wastage can be diminished, and hence the amount actually available in the garden becomes greater.

I need not now discuss the devices, such as ridge cultivation, dressings of soot, &c., used to increase the amount of heat absorbed by the soil. We are more concerned with the losses, to see to what extent they can be reduced. The heat entering the soil is spent in three ways: it raises the temperature of the soil, it raises the temperature of the water in the soil, and it evaporates the water. The amount required for the last process is many times greater than that required for the second, which in turn is four or five times greater than that spent on the first. Indeed, we may take it that the temperature of a soil depends to a greater extent on the amount of water it contains than on anything else. So long as the water does not evaporate it simply stores up the heat absorbed, and saves it for the colder months; a moist soil is cooler in spring and early summer than a dry one, but retains its heat further into the winter. This explains the common observation that plants grow longer and delaying ripening more on a moist soil than on a light dry one, though on the dry soil they start earlier into growth. On the other hand the heat lost in evaporation is permanently lost to the garden; it will, of course, be recovered when the vapour condenses as rain, but that may fall miles away, and someone else will gain the benefit, just as our western shores owe their increase of temperature over the eastern counties to the heat liberated when rain is produced from the water evaporated out of the ocean. The heat lost by the ocean during the process is transferred to our west coast districts.

The main loss of heat, then, is evaporation of water from the soil. No good gardening end seems to be served by the process, the water and heat lost can ill be spared, and our best efforts in cultivation should be directed towards keeping it in check. Of all the methods by which this can be done, shelter in one form or another is one of the best.

It is quite obvious that any shelter, be it ever so slight, that keeps off the wind will check evaporation, but it is astonishing how great the effect is. King at Wisconsin found that a scanty hedgerow acted for a distance of 150 feet, and more surprising still, a crop of Clover sheltered a neighbouring field for about 300 feet. The most convincing thing of all is to try the experiment; select a plot in the open, shelter part of it with a miniature fence about 2 feet high, and leave the rest exposed; put the thermometer 5 or 6 inches into the ground, and take the temperature occasionally for a few days. The students at Wye College usually find the sheltered part 2° or 3° warmer than the unsheltered. A wooden fence, a hedge, a row of tall or bushy plants, a row of Beans or Peas, even a row of Pea-sticks, if judiciously placed to keep off the prevailing wind or ground draught, improve the prospects of the rest of the garden by increasing the temperature and the amount of water in the soil. A brick wall is sometimes not so good in spite of the warmth retained by the bricks; it may cause eddies, and the little whirlwinds thus produced do much damage. Especially is this the case in some of the old-fashioned circular walled-in gardens, which seem to get the wind no matter whence it blows. In these cases it is advisable to try running out little wind-breaks at right angles to the wall.

A mulch of dung, straw, and other organic matter has substantially the same effect. If applied in the autumn it prevents the loss of much of the stored-up heat; it checks evaporation of the soil water, and ensures that the plants shall start growing early. But the plan is not without its risk—slugs and vermin of many kinds are harboured, the soil does not get aërated, and the early growth may end disastrously if a spell of frost comes on. If we try to avoid these dangers by mulching in spring, the ground is sheltered from the drying winds and its moisture is conserved; the plant is also sheltered, and may make an early start, but the scanty sunshine of the early months cannot get through the mulch to warm the ground.

No general rule can be given; it is, in fact, one of the most interesting points of the gardener's profession that his own judgment must be his chief guide in balancing the probabilities and evolving safe rules of conduct to fit his own particular case from general principles as enunciated above. Plants like Strawberries and Roses on Briar stocks, that must have water in abundance if they are to do well, and have been so long in cultivation here that they are inured to our climate, are perhaps most advantageously mulched in spring; but more tender plants, which cannot spare any of the autumn heat, must be mulched before the winter sets in if they are to remain in the ground at all.

Whilst shelter in the form of wind-breaks or mulches can generally be arranged to check evaporation and so conserve the heat in the soil, there is a source of loss which has not yet been very successfully dealt with—I refer to the loss by radiation. On still clear nights in spring and autumn the ground gives out its heat very rapidly, the temperature falls, and the moisture in the air condenses, forming dew; finally this freezes. In this way are produced the spring frosts which do so much damage in our fruit gardens, at times causing large growers a loss of some hundreds of pounds in a night. The danger is greatest in valleys; the cold air from the hills being heavier than unchilled air, sinks into the valley and displaces the warmer air, which, flowing up to the higher ground, keeps it warm. A late spring or early autumn frost will for this reason generally appear on lower ground, and not on higher ground half a mile away. Standing on a hill when the dew is falling, we can observe the places where this cooling action is greatest, because it is here that the dew forms first; slight irregularities in the ground, scarcely noticeable in the daytime, can be detected in this way. Mulching may reduce this action, but cannot prevent it, nor will any system of wind-breaks; the shelter must be overhead. A blanket of smoke obtained from bonfires has been used with advantage; the Americans devised a scheme for spraying over the garden water distributed from tall jets placed ten to the acre, the man in charge being wakened at the proper time by an electrical thermometer. Another method not uncommonly adopted by them is to cover the crop with cheese-cloth spread on light wooden frames. We do not as a rule adopt these overhead shelters in England, but either grow under glass or put up with the loss; an exception is, of course, the practice of shielding exhibition Tulips. Yet the problem is a very important one, and might with great advantage be attacked in some experimental garden.

Turning now to the effect on the plant, shelter ensures an increased temperature; but whether this is always beneficial cannot *à priori* be decided. Unfortunately we do not know definitely the most favourable temperatures for all of our garden plants, but experience soon shows whether in a particular garden a given plant requires more or less shelter. Too much may do harm by keeping off sun and air; if the shelter is a living plant it may do further harm by taking away water. At the Woburn fruit farm it is found better, even on a small scale, to have fruit and vegetables separate than to mix them. On the other hand, if the plant is too much exposed and gets a severe check early in life, it may never recover. Moreover, a rather high temperature is necessary for making chlorophyll, and exposed young crops are apt to look very yellow in bleak cold weather. The mechanical injury done by the wind is also of importance; if the plant is badly blown about the stems get twisted and the foliage becomes sere. This reacts on assimilation and affects both growth and root development. A wind-bruised Rose-tree is indeed a sorry spectacle, and even if recovery takes place to such an extent that presentable blooms appear in July, the spray of leaves behind the flower so dear to the heart of the exhibitor is conspicuously absent.

But it must not be forgotten that too much shelter is bad for the plant. A soft, watery growth is induced; the plants become liable to every disease that happens to be about, and the gardener must be prepared with sulphur to check mildew, and with his various washes to keep down other pests. In the East Kent hop-gardens sheltering has become a fine art, and probably nowhere is more attention necessary to prevent diseases getting a foot-hold. And as if the summer troubles were not enough, soft, sheltered plants may be cut down by autumn frosts much sooner than hardy, unsheltered ones.

Experiment and observation alone can decide how far it is safe to go, and when the disadvantages of increasing the shelter begin to outweigh the advantages. *Edward J. Russell, D.Sc. (Lond.)*

HELIAMPHORA NUTANS.

This interesting insectivorous plant was discovered by the brothers Schomburgk in 1839 on the mountains of Roraima, in British Guiana. It was refound by Burke (an English Orchid collector) in 1881, who brought plants of it to Messrs. Veitch & Sons, one of which flowered in 1889, and from which the *Botanical Magazine* figure (t. 7093) was prepared.

The illustration at fig. 79 represents a specimen growing in the Cambridge Botanic Garden. It was composed of about thirty fully-developed pitchers, and bore nine flower-scapes. The largest pitchers were about 6 inches high, pale green in colour, slightly tinged with red, and clothed with hairs on the inside similar to the Sarracenias, to which it is allied. The pitchers are not nearly so highly coloured as those represented in the *Botanical Magazine*. The flower-scapes are bracteate, from 12 to 15 inches high, slightly hairy, and brightly tinged with red towards the top, the strongest ones producing a fair-sized pitcher about 3 inches from their base. The perianth is bell-shaped, composed of usually four, rarely five pure white sepals, which after a time become spreading, and change to pale-green, and seem to be more or less persistent. I have tried several times to get good seed by crossing, but have failed, owing no doubt to the necessity of having pollen from a distinct individual, as all our plants originated from one piece.

A good specimen is not often seen, and it is considered rather a difficult plant to cultivate. This specimen has been grown from two single crowns during the last four years, and from which several pieces have been taken from time to time. Our plants are started from single crowns in small pots in a mixture of peat, sphagnum-moss, and sand, and given a surfacing of sphagnum-moss. They are then plunged to their rims in a pan of moss, covered with a bell-glass, and placed in a light position where a minimum atmospheric temperature of 60° Fahr. is maintained. They require copious supplies of water both at the roots and overhead, especially during the summer months. *E. J. Allard, Botanic Garden, Cambridge.*

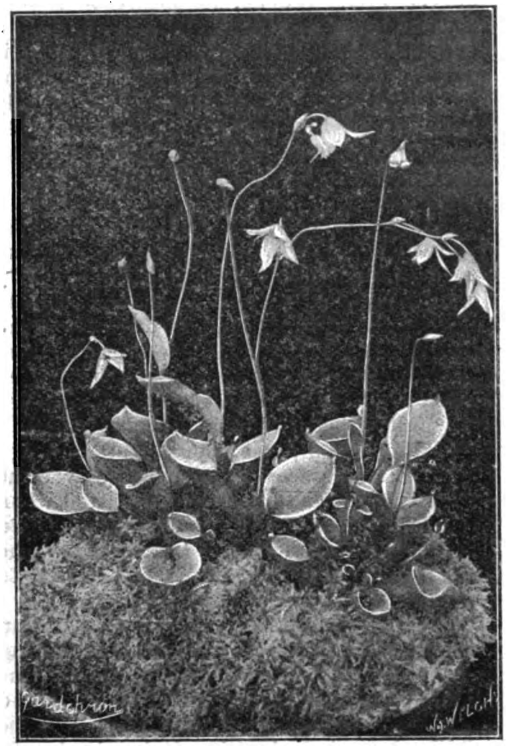


Fig. 79.—Heliamphora nutans.
(Much reduced.)

NORTH AMERICAN OAKS.

[See Supplementary Illustration.]

In their native country the North American Oaks contribute very greatly to the beauty of the landscape. This is more especially the case in autumn, just before the fall of the leaf. I am not one of those who have been fortunate enough to see the deciduous vegetation of eastern North America in its autumnal glory, but the richness of the colour effects is, I believe, never equalled in this country. To this wealth of colour the Oaks contribute in no small degree.

In the British Isles the most ornamental of the American Oaks belong to the group known collectively as the Red Oaks. To this group belong Quercus coccinea, Q. rubra, Q. velutina (tinctoria), and Q. palustris. There is nothing finer among all our deciduous trees as regards autumnal colour than the best forms of Quercus coccinea or the "Scarlet Oak." From the Knap Hill nursery in particular there has been distributed a magnificent form of this Oak, which Mr. Waterer has named "splendens." This form is not only particularly rich in the crimson colour of its decaying leaves, but it is remarkable also for the length of time the foliage lingers on the tree. In ordinary years it does not fall much before Christmas, and retains much of its colour all the time.

Quercus rubra, the "Red Oak," has been largely planted in this country, and some fine specimens exist. It grows quicker, perhaps, with us than any other American Oak. At Kew there is a tree of this species with a trunk 14 feet in circumference. Usually its foliage turns a dull purplish-red. I think, however, this matter of autumn colour is influenced by the soil and possibly other local conditions. In the beautiful and picturesque grounds of Arley Castle, near Bewdley, a large number of trees of the Red Oak were planted by Lord Mountnorris in the early decades of the last century. These usually turn a rich crimson in autumn, and at their best afford one of the most gorgeous colour effects that can be seen in England.

Quercus palustris, the "Pin Oak," is a tree of denser, less open habit than the Red or Scarlet Oaks. Its leaves are more deeply lobed than those of either, and in some places are said to colour finely in autumn. I have not myself seen this, and I believe there is some confusion between this species and Q. coccinea.

The White Oaks of North America, of which three or four species are in cultivation, possess little value in this country. Quercus bicolor and Q. macrocarpa are perhaps the best of them, but I have not seen a really fine specimen of either. Still there may be some in old-established gardens.

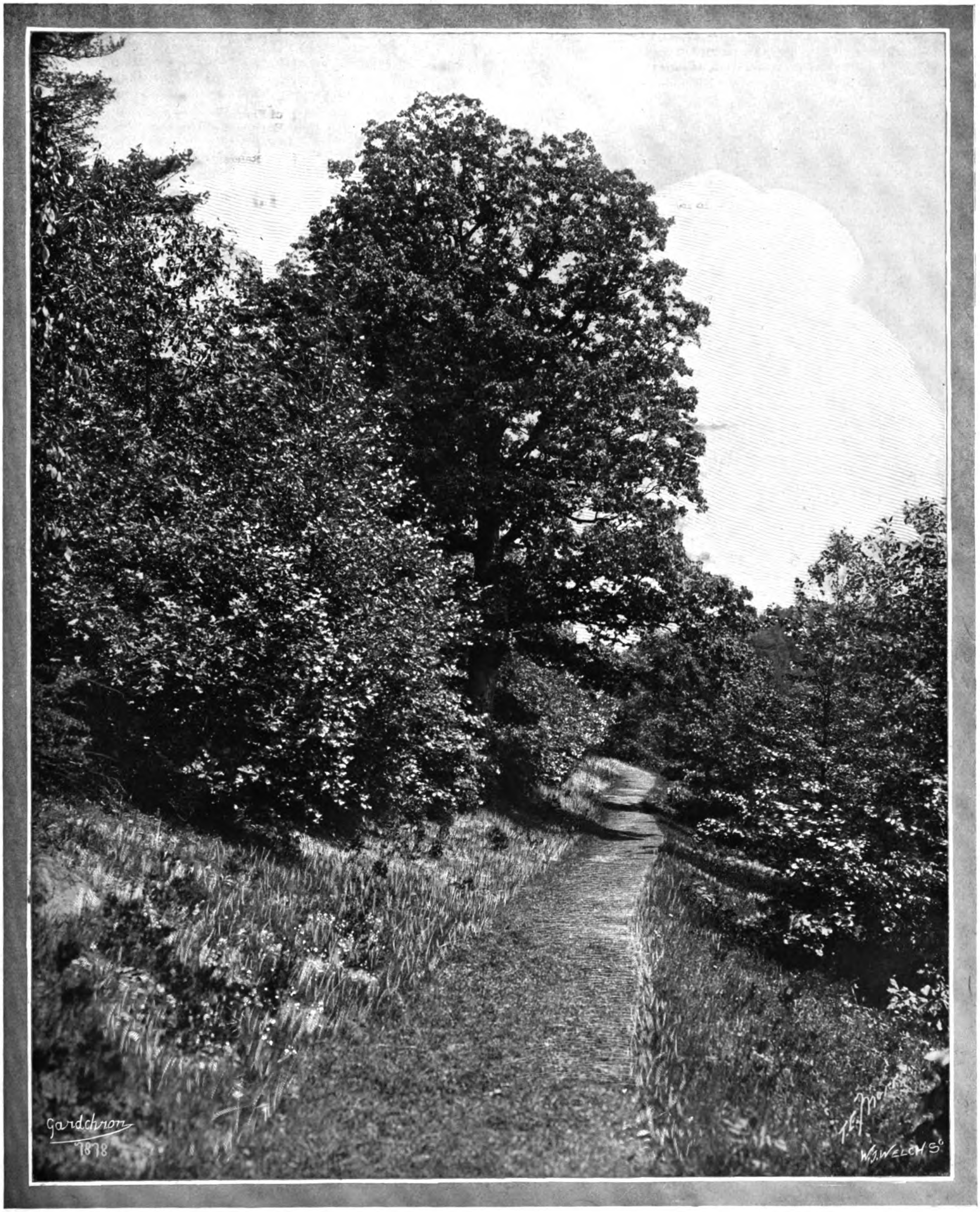
The "Willow Oak," Quercus Phellos, thrives well in the South of England. There are several fine specimens in the neighbourhood of London. Two specimens at Kew are worthy of mention: one is about 80 feet high; the other, of more rounded habit, has a trunk 12 feet in circumference. This species is, when in full leaf, one of the most distinct and graceful of the New World Oaks; its leaves are narrow, Willow-like, and glossy green. They remain on the tree late in autumn, but do not colour well. Quercus heterophylla is supposed to be a natural hybrid between Q. Phellos and Q. velutina. It is a quick-growing, handsome tree.

The "Water Oak," known best, perhaps, as Quercus aquatica, is properly the Q. nigra of Linnæus. It has green, obcuneate leaves, and is chiefly noteworthy in its leaves remaining fresh and green on the tree till Christmas or New Year. Like several other North American trees which occur wild in swampy ground, it appears to require in this country only such moisture as a deep loamy soil naturally affords.

It has been observed that the Oaks of Western North America approximate more closely to the European Oaks than the (geographically nearer) Oaks of the Eastern States do. Two good examples of this are Quercus agrifolia and Q. Wislizeni, both Californian species and both very much resembling some forms of the European Holm Oak, Q. Ilex. A third species, also Californian, is noteworthy for the tawny-yellow under-surface of its leaves, and may be compared with the Golden Oak of Cyprus, Q. alnifolia. It will no doubt thrive best in the warmer parts of our islands; in Cornwall and such places it ought to make a fine and interesting tree.

A fourth Californian species, Quercus densiflora, is distinct from any other Oak in cultivation.

Supplement to the "Gardeners' Chronicle."



AMONG THE OAKS IN THE ARNOLD ARBORETUM, CAMBRIDGE, MASS.

There are two healthy specimens at Kew, but I do not know of its existence elsewhere in this country. The leaves are 3 to 4 inches long, ovate-lanceolate, and of stiff texture; they are dark-green above, but the lower surface is covered with a felt-like substance, which, although it becomes tawny with age, is beautifully white when the leaf is young. I fear there has not been in late years such a demand for species of Oak as to encourage nurserymen to pay much attention to them. Still, I think it is a pity that an effort is not made to introduce so distinct and interesting a species as this in quantity, especially as it is becoming rarer every year in its native country.

The "Live Oak," Q. virginiana, or Q. virens, is the only truly evergreen Oak of the Eastern States that has been introduced. Although in the Southern United States it is a very valuable and ornamental tree, it is not hardy in this country except possibly in the extreme south-west. The large specimens of the Live Oak mentioned by Loudon as existing near London fifty to sixty years ago were of some other species, probably Q. Ilex. *W. J. B.*

TREES AND SHRUDS.

LONICERA FRAGRANTISSIMA.

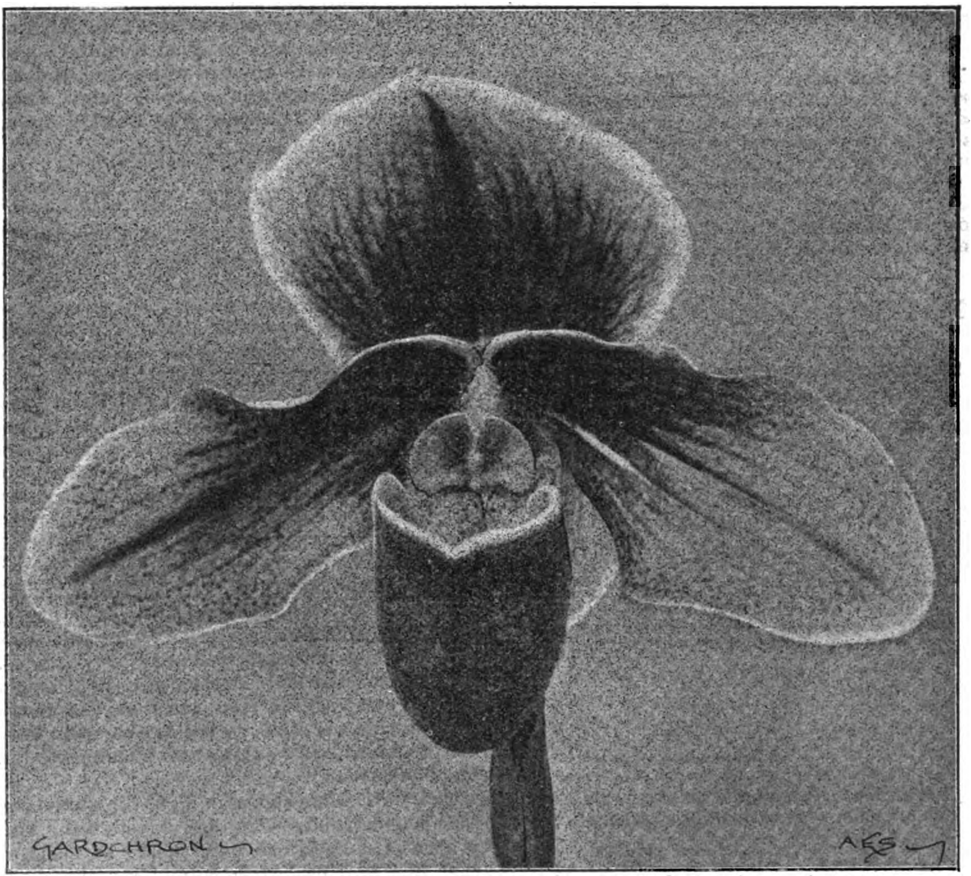
THIS plant, though not very showy, is of value as a sweet-scented, winter-flowering shrub. The flowers open from January to March whenever the weather is favourable, and are borne in pairs on short pedicels at the base of the young growths. They are small, white, and in shape like those of a Honeysuckle, with a short tube and a deeply-cleft, reflexed corolla, having a strong scent resembling that of Daphne Mezereum. In habit the plant is a rambling shrub with long, thin shoots which can be trained so that the plant may be used as a low climber, for which purpose it is worthy of more extended use. It is only partially deciduous in the open, and against a wall the leaves are usually carried throughout the winter. Any ordinary soil seems to suit this Honeysuckle provided it is not too wet, and a sunny situation suits it better than shade. If a frost occurs during the flowering period the plant merely loses the blooms that are open, the later buds developing as soon as the weather becomes milder. Propagation is effected by cuttings, which can be made from half-ripened wood, and rooted in a cold frame in August, or pieces of ripe wood inserted outdoors in a sheltered place in winter will make roots readily. It is a native of China. *J. C., Bagshot.* [A figure of this species and of the allied L. Standishii was given in our issue for February 23, 1889.]

SAPINDUS MARGINATUS.

We are indebted to Mr. George Paul for a fruiting spray of this American tree. As it is a native of the Southern States near the coast, and extends westwards to Southern Arizona and Northern Mexico, it is not likely to be hardy in this country, except in our south-western counties, the Channel Islands, and South-west Ireland. In our South African and Australian Colonies it would be likely to succeed. It is a tree attaining to a height of 40 to 60 feet, with pinnate foliage, with six or more pairs of narrow lanceolate leaflets, and a terminal one of the same form. The flowers, which are numerous, small, inconspicuous, and arranged in loose pyramidal panicles, are succeeded by globular berries, each the size of a small Cherry, amber-coloured, with a translucent skin. These berries remain attached to the branches for a long period, so that the attractiveness of the tree depends in a large measure on them. The berries are, it is said, eaten by cattle and deer. If so, "their taste is not the same as ours," for a trial did not induce us to make any further experiment. Naudin, in his *Manuel de l'Acclimateur*, p. 487, mentions the plant under the name of S. emarginatus, and tells us that it is hardy in Algeria, where the durability and beauty of its wood render it valuable. The berries contain "saponin," and are employed in the removal of grease from woollen materials and in the manufacture of soap. Two good illustrations are given in vol. ii. (1891) of Sargent's *Silva of North America*, t. lxxvi., lxxvii.

CYPRIPEDIUM × HAYWOODIANUM.

THIS fine hybrid Cypripedium has been raised in the gardens of Mrs. Haywood, Woodhatch Lodge, Reigate (gr., Mr. C. J. Salter), and when shown at a meeting of the Royal Horticultural Society on the 14th ult. it gained an Award of Merit. The hybrid is rom a cross between C. × T. B. Haywood and C. bellatulum, and, as will be seen from the illustration, it has large flowers of excellent form. They are tinted with rose-purple, and veined with claret colour, the upper margin of the dorsal sepal being white.



[*From a photograph by Jno. Gregory.*

FIG. 80.—CYPRIPEDIUM × HAYWOODIANUM: COLOUR OF FLOWER PURPLE AND WHITE,
Which obtained an Award of Merit at the Royal Horticultural Society on March 14.

FLORISTS' FLOWERS.

PENTSTEMONS.

CUTTINGS of these plants that were inserted in a cold frame or in boxes in September now require attention. If when the cuttings were planted sufficient space was allowed for their development until they are finally planted in the open, all that they will require now is abundance of ventilation in order to induce robust growth. A good plan is to remove the lights whenever the weather is favourable, placing them on again at night-time. Stir the soil between the plants, removing any moss or dead leaves, and keep the plants well supplied with moisture at the roots. Should the plants require more space, the present is a suitable time to shift them. They may be planted in an ordinary cold frame, with a bottom formed of coal-ashes for drainage, placing a layer of about 2 inches in depth of half-decayed horse-manure and some old Mushroom-bed materials, finishing with a layer of sandy compost. The manure affords an excellent medium for the roots, and enables the plants to be lifted with a good ball of earth at planting time. Lift the plants carefully, giving each a space of 3 inches. Afford water with care, and keep the frame closed for some days, and until new growth is made. If large and early-produced flowering-spikes are desired, do not stop the plants by pinching, but allow them to grow uninterruptedly. If, however, more spikes and a later display of flowers are required, then pinch out the point of each plant when it has attained a height of 4 inches.

SWEET PEAS.

Those that were sown during the first week in February are growing sturdily. Should the pots be already full of roots shift the seedlings to larger-sized pots. The plants cannot be grown too vigorously at this stage, presuming they have abundant space to allow of sturdy growth. Pots 6 or 7 inches in diameter will afford ample space for the plants until planting time arrives. A suitable compost is one consisting of two parts fibrous loam, one part half-decayed horse manure, with a dash of bone meal.

When the first tendril appears some support is necessary for the haulm. Twiggy Hazel or Birch shoots 1 foot in length answer the purpose well; indeed nothing is better than pieces of a partly-worn-out Birch-broom. On the whole the seeds have germinated remarkably well this season, showing how well the crop was harvested last summer.

PHLOXES.

The month of March is a suitable time to increase the stock of both early and late-flowering varieties of herbaceous Phloxes. If growth is not too far advanced, stools that will admit of division should be carefully severed, selecting small portions from the outside of the stools, as these give the best results. Although this type of Phlox succeeds well in the herbaceous border, if extra large flower-trusses are required the plants should be grown in a separate bed where they can be fed liberally with liquid manures. A good method of increasing the stock of these plants is to insert stout cuttings during the first week in April. They should be placed in sandy loam in a cold frame, keeping the frame shaded until roots are formed, after which air should be given freely. When the plants are well furnished with roots, lift them carefully, preserving as much soil about the roots as is possible. Plant them in a triangular manner about 7 inches apart. These will produce during September and October good trusses of flowers, varying in height from 1 foot to a yard, according to the variety. *E. Molyneux, Bishop's Waltham.*

DAHLIAS.

In a recent number of the *Revue d'Horticulture Belge*, is an article by M. Charles Pynaert, and a coloured illustration of some semi-double Dahlias of large size and with flat florets. They were raised by Mr. Hornsveld, of Baarn, and have been introduced into commerce by Messrs. Capyn & Sons, of Utrecht. Some of the varieties were shown at Düsseldorf, and others at Paris, where they received the award of a Gold Medal.

ANOTHER APPLIANCE TO PREVENT "DRIP."

Although we have adopted in recently-erected plant and orchard houses condensation channels in both the principal and ordinary rafters, similar to those shown on p. 155, yet having suffered considerable damage to Orchids and various other plants from drip in previously erected structures, one could not fail to understand the importance of the editorial remark at the end of the paragraph respecting Messrs. Foster & Pearson's sash-bar. As we could hardly strip the roof off houses in good repair in order to insert glazing bars with condensation channels, we adopted the following methods with perfect success and at very slight cost.

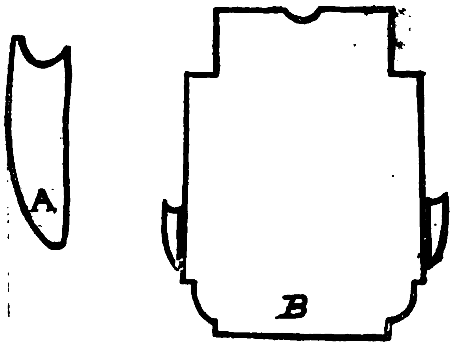


FIG. 81.—APPLIANCE TO PREVENT "DRIP."
A, Section of Pine Moulding (*full size*), with condensation channel.
B, Section of principal Rafter (*one-third actual size*).

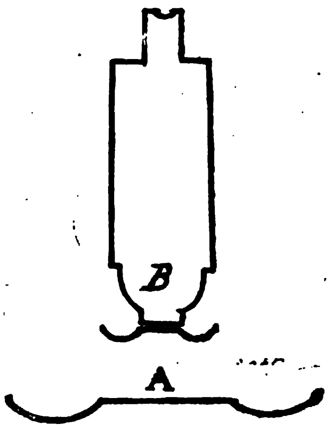


FIG. 82.—APPLIANCE TO PREVENT "DRIP."
A, Section of Zinc Moulding (*fullsize*).
B, Ordinary Glazing Bar (*one-third actual size*).

Anyone adopting this method would naturally vary the form of moulding in keeping with the form of rafter in use, the hollow channel being the important and essential part.

Bearing in mind the importance of obstructing the light as little as possible, we adopted two different devices. To the principal rafters we fastened Pine mouldings (see fig. 81, A). To the ordinary rafters or glazing-bars we fastened zinc mouldings underneath (see fig. 82, A), rolled specially to my design by Messrs. Braby & Co., zinc workers, Euston Road. It is not at all necessary to have the zinc channelling wider than the rafter. The surfaces attached to the bars of both the zinc and the Pine mouldings were heavily coated with thinned white lead, and the whole finished with two coats of paint. *Ralph Godbeer, Rockhurst Gardens, West Hoathly, Sussex.*

GARDEN WALL SHADES.

How frequently it happens that a promise of a good crop of fruit on wall-trees is shattered in one night; yet this might easily be avoided by affording a slight protection, an example of which is shown in fig. 83. A brief description how to make a similar shade will perhaps be useful to those readers of the *Gardeners' Chronicle* who are amateur horticulturists and know just a little of the practice of carpentry. It is not necessary to possess an elaborate collection of tools, and this article is written presuming the reader is not so equipped, the reason being that the man who has the tools generally has the knowledge to use them and would not want suggestions how to make a simple fruit-protector. It is the man who has limited tools and limited experience of woodwork who will, it is hoped, find the instructions given below useful. One can nowadays purchase wood practically finished, *i.e.*, cut to size and machine-planed at but a trifling cost beyond the price of the rough material, this is encouraging to those who have not the facilities for sawing and planing wood in large quantities.

The wall shade shown in fig 83 represents one that measures 8 feet long and 2 feet deep. This is about as long as one part should be made, so that if a greater length is required the shade should be made in two or more parts. If, for example, the shade is required 12 feet long, it is better to make two 6-feet frames rather than one long one, besides which it is very much easier to make them in the shorter lengths and easier to fit them. It is convenient also to have a wall shade detachable, so that for this reason also short lengths are the handier.

The shade is made exactly on the same principle as a light for a cold frame. The top rail, which fits close to the wall, is of 3 by 2 inch quartering of yellow deal, the sides 2 by 2 inch, the bottom or front rail is of 3 by 1 inch stuff, which really means $\frac{7}{8}$-inch thick when planed. This is mortised into the sides, and the sides into the top rail, whilst the intermediate sash-bars, 2 by $1\frac{1}{4}$ inch, are mortised into the top rail, and shouldered on to the bottom one.

This, then, is the theory; the next thing is how to do it. Take the top rail first, which should be cut about 3 inches longer than will ultimately be required; a rebate will have to be cut on the inside edge, as shown in section in fig. 84 at A, the rebate being $\frac{3}{8}$ inch wide and $\frac{5}{8}$ inch deep. The amateur who does not possess the necessary plane to do this can adopt an easier method by nailing a strip on the inside edge, as shown at B, fig. 84, which will answer the same purpose; and the same particulars apply equally for the side rails, although, if adopting the second method, the strips are put on after the frame has been put together, whereas in cutting a rebate out of the solid it is done before making the joints.

Fig. 85 shows how the sides and top rail are put together with mortice and tenon-joint, and also shows the mortice prepared in the side for the front rail. The amateur should note that in the tenon which fits into the top rail the shoulder is deeper on the underside than at the top; this is on account of the rebate, and must be allowed for when cutting the length of the side pieces. If the shoulder or rebate for the glass is fixed on to the frame, the latter can be jointed together by "halving," as illustrated in fig. 84, E. It is of course a much easier way of making the frame; but if the amateur is anything of a carpenter he will naturally prefer to mortise and tenon the parts together.

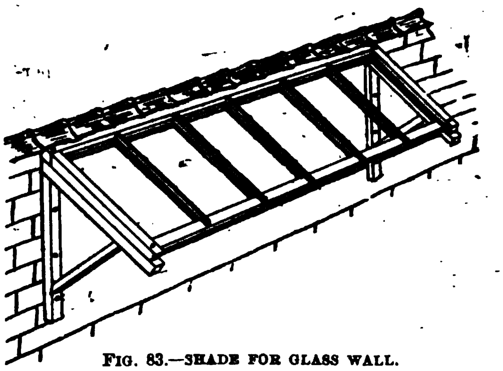


FIG. 83.—SHADE FOR GLASS WALL.

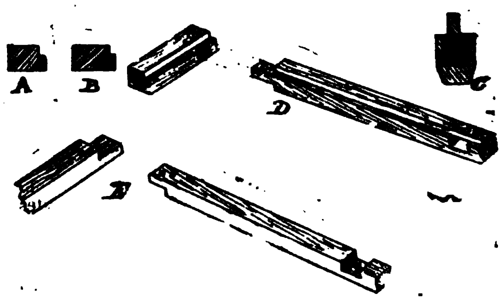


FIG. 84.—SHADE FOR GLASS WALL.
A and B, section of rail; C, section of sash-bar; D, mortice and tenon joint; E, "halving" joints.

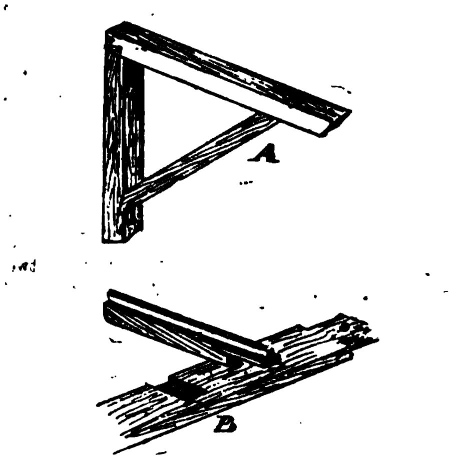


FIG. 85.—SHADE FOR GLASS WALL.
A, wall bracket; B, fitting sash-bars to front rail.

The intermediate sash-bars should be placed about 15 inches apart. These bars, which are $1\frac{1}{4}$ inch wide and 2 inches deep, are best bought ready prepared; it never pays the amateur to work these up by hand. A section of the sash-bar is shown in fig. 84, C, the dark square representing the size of the tenon, which need not go into the top bar more than about 1 inch.

Fig. 85, *b*, shows how the sash-bars are fitted into the front rail, the recess in the latter being ½ inch deep and 2 inches long, the bottom of the rebate when fitted should come flush with the front rail. The tenons on the front rail are 2 inches wide, which means that there is a ½-inch shoulder each side. The bars are fixed to the front rail with a couple of brads or wire pins to each. By carefully following these instructions any length of shading can be made. The shading is fixed at an angle of about 30° to the wall, so that before fixing the frame permanently together the side of the top rail which fits against the wall should be bevelled off with the plane to this angle, then joint-up and secure the tenons to the mortices with ½-inch wooden pegs through them.

To fix the shade to the wall so that at any time it can be taken down, brackets must be made similar in design to those shown in fig. 83, and are of 2-inch-square quartering throughout. The method of putting them together is clearly shown in fig. 85, *a*, so that very little explanation is necessary. The upright is 24 inches long, the top piece 27 inches, which is fixed at an angle of 30° to the upright, and is "halved" to it. The stay is mortised into the top piece, and at the other end fits into a nitch cut in the upright. It is important that these brackets should be firmly fixed, and so the wall must first be plugged where the nails are to come, cutting out a hole for each about 1 inch over and 3 to 4 inches deep with a cold chisel; then drive in a hard wood plug, cu[illegible] it off flush with the wall. The shades should be then laid on to the brackets and fixed with screws.

Finally come the painting and glazing. A coat of priming is first required, which is made up of white-lead, dryers, plenty of boiled oil and some red-lead to harden it, and when this has become dry putty up any ill-fitting joints, and then glaze the lights, using 21-oz. glass, which is the cheapest in the end, laying it on a bed of putty at the top and two sides, and after pressing the glass evenly on the putty, scrape off any of the putty appearing above the glass. Put a couple of wire pins to each division into the front rail to prevent the glass slipping down; then proceed to paint with white paint (white-lead, dryers, two-thirds boiled oil and one-third turps), letting the paint just cover the edges of the glass about ½ inch at the top and sides. The work should have not less than two coats of paint in addition to the "priming." *S. W. N.*

SEED TRADE.

The Vegetable Crops in Italy.—Advices from Naples state that since the middle of November there has been a succession of hard frosts almost without intermission, and owing to their unusual severity during the past months they have caused great damage even to the less delicate plants.

Cauliflower.—The breadths put out for seed-supply have specially suffered, and it is anticipated that not more than a fourth of the plants will yield seed.

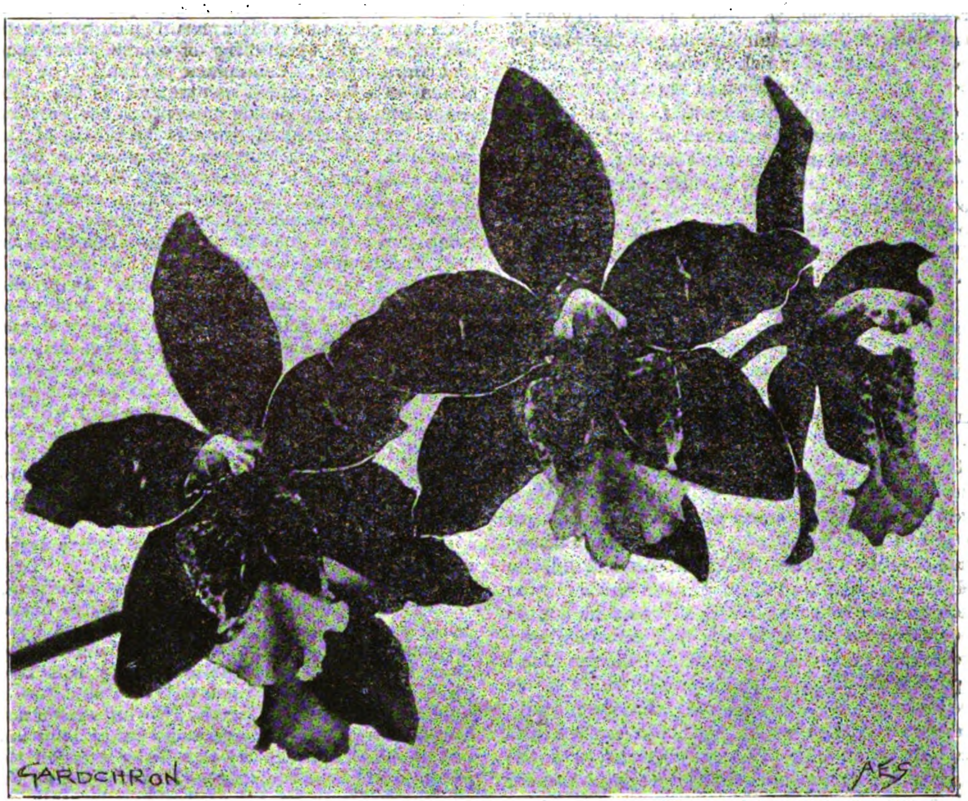
Onion.—English seedsmen are so much dependent upon Italian growers for the Tripoli and Improved Silver-skinned types, that they will regret to learn that the crop will be short all round.

Garden Beans.—Here again will be a great shortage of crop, and no hope of improvement.

Flower Seeds.—The autumn sowing of these has suffered severely, and any quotation of prices which may be made are for prompt orders, but without any guarantee as to the quantities to be supplied. *Pisum.*

ODONTOGLOSSUM × LAWRENCEANUM.

At the meeting of the Royal Horticultural Society on March 14 two hybrid Odontoglossums were exhibited by M. Charles Vuylsteke, of Loochristy, near Ghent, Awards of Merit being recommended in each case. One was named amabile, and was raised from a cross between O. crispum and O. Harryano-crispum; the other, of which an illustration is given at fig. 86, and named Laurenceanum, being from a cross made between O. triumphans and O. Rolfeæ. This latter hybrid is a fine flower, having yellow sepals and petals heavily barred with chestnut-brown colour. The lip is marked with purple over a white ground.



[From a photograph by Jno. Gregory.

Fig. 83.—ODONTOGLOSSUM × LAWRENCEANUM: COLOUR OF FLOWERS CHESTNUT-BROWN AND WHITE.
Award of Merit at Royal Horticultural Society, March 14.

ALPINE GARDEN.

SAXIFRAGA BURSERIANA AND ITS VARIETIES.

Early as the flowering of Burser's Saxifrage usually is, it was much earlier in the present year, and other species appear also to be in advance of their usual time. The only drawback to this exceeding earliness is the possibility of the flowers being cut off suddenly by frost. Where a cold house or frame exists, and these plants can be given shelter for a time, the earlier flowering is appreciated, but where no such shelter is forthcoming the inflorescence loses much of its beauty. I advise shelter for the flowering time only, and for the single purpose of retaining the blooms as long as possible in good condition after they begin to expand. Those plants which constantly receive shelter in frames are robbed of much of the early beauty of stem and flower-bud. For this reason the few specimens I now grow are fully exposed, and for a month at least before a single flower opens some kinds are exceedingly beautiful in the colouring of their flower-stems and buds. Of Burser's Saxifrage there are at least three well-marked forms.

S. Burseriana (type).—The individual rosettes are small and spiny, leaves greyish, about ½ inch in length. Plant closely tufted, spreading, and of free growth. The flowering-stems are not more than 1 inch long at flowering time. Stems reddish; calyx pale-green, with red tipped segments or lobes. Flowers solitary, white; ovary creamy-yellow. Blooms in February and March.

S. B. major.—This is the finest of the set. In all its parts the plant is fully twice as large as the type. The spiny rosettes of leaves have a heavy glaucous hue, and are rather more irregularly tufted. This is so well marked a characteristic of the plant that the specialist at any season of the year may recognise the variety from all others. The flower-buds and stems are of a pronounced reddish-scarlet, and are conspicuous in the middle of January. Stems 2 to 3 inches long, the alternately-disposed, ovate, acuminate leaves coloured equally dark green and scarlet. Flowers usually solitary, and nearly 1 inch in diameter. This is one of the most valuable of early-flowering alpine plants. A good example of this in a 7-inch pot has given some nine dozen of its glistening pure white flowers.

S. B. macrantha is said to be the largest-flowering variety of this group, and it blooms later. The rosettes are almost wholly green, exceedingly minute, and contracted at the tips, not widely expanded as in the other kinds. A six-year-old plant of this singularly sparse-flowering variety is but one-fourth the size of S. B. major; its lateness to bloom is its chief merit. If potted quite firmly in loam, road-grit, and old mortar-rubble, and the plants divided as often as necessary so soon as flowering is well past, these Saxifrages give but little trouble; but good drainage should be provided, and abundance of water should be afforded throughout the spring and summer.

SAXIFRAGA GRISEBACHII.

The hirsute, crimson inflorescences of this Macedonian species have proved an attraction for weeks past, from the moment that their coming was signalled by the more mature rosettes assuming the cup form in their centre, and the first touch of blood-crimson was visible, until nearly eight weeks later, when the leafy, hairy stems have become 6 inches high, crowded in the club-shaped form of the upper portion with somewhat fleshy, roundish, crimson bracts. In the growing season of last year for a long time the 3-inch-wide rosettes gave one the idea of a small S. longifolia, but lacking a good deal of the latter's hoary incrustation. Presently, however, S. Grisebachii attempted to separate the large rosette, several plants forming two centres each and producing the distinct inflorescence referred to. Prior to the flowering stage being reached, this dividing of the rosettes robs the plants of much of their beauty, and a growth not unlike that seen in the winter rosettes of Androsace sarmentosa results. It is to this peculiarity, however, that much of its freedom of flowering is due, and arranged among stones on the rockery it is the most picturesque member of the genus in bloom in February. The species grows freely in any sandy soil, and the rosettes will root freely in coal-ashes and similar material. *E. H. Jenkins.*

NOVELTIES.

ARABIS ALPINA.

VARIETY WITH DOUBLE FLOWERS AND VARIEGATED LEAVES.

AMONG the many novelties brought out this season this is one which will no doubt attain great popularity as, being perfectly hardy, it can be grown successfully by anyone and without much trouble. In 1899, Mons. A. Lenormand, the well-known seed and bulb grower of Caen, was the fortunate raiser of Arabis alpina with double flowers, a form which is now well known wherever hardy plants are grown, for it has been found to possess all the good qualities with which it was credited when it first appeared. An accidentally variegated branch which had been noticed and carefully nursed by Mons. Lenormand was the origin of the entire stock of the novelty now under notice. It may be confidently expected to find a place in every garden on account of its variegated foliage coupled with its conspicuous flowers, which in early spring are produced in great abundance. The flowers are pure white, perfectly double, delicately scented, and in general appearance much resemble those of a double Stock, but as they are borne on long, slender stems, and not set so closely together, they are particularly useful for cut flowers. It may be added that, even when not in bloom this plant still possesses special decorative value on account of the bright colour of its foliage, which in the early stage is quite white, but gradually develops into a regularly and evenly variegated plant. *Geo. Schneider, 17, Ifield Road, Fulham Road, S.W.* [The doubled-flowered Arabis was in cultivation many years ago, but has recently been re-introduced. ED.]

SPRAYING.—It has been demonstrated over and over again by nearly every experiment station in the country, says *American Fruits*, that the codling moth can be largely controlled by thorough spraying of the trees with a poison. At least two applications are necessary, the first just after the petals of the blossoms have fallen, and the second a week or ten days later. Use either Paris-green at the rate of 1 lb. to 100 gallons of Bordeaux-mixture, or the arsenate of lead at the rate of 1 lb. in 50 gallons of the fungicide. It is largely a question of thoroughness of the application.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cœlogyne cristata having flowered and been given a rest for a week or two afterwards may now receive attention. Large specimens will retain their vigour for a number of years without much being done to them; but small plants should be potted on every two years or so. When any large plant needs re-making up, carefully separate the pieces, leaving three or four pseudo-bulbs on each and a short length of rhizome without bulbs for convenience in potting. Use shallow pans of suitable size, and having perforations around the sides. Fill these to within 3 inches of the rims with clean drainage, over which a layer of moss may be placed to prevent the compost being washed into it. The latter may consist of equal parts of fibrous loam and peat, and a fifth part of sphagnum-moss, adding a good sprinkling of coarse silver-sand and small crocks. Commence to rebuild the specimen on a low conical centre, and as the sides are neared so dispose the pieces that the growing points may be directed towards the centre of the specimen. Do not bury the rhizomes or bulbs more than is needed to steady each in the desired position, but work the materials in evenly and press them together moderately firmly. When completed give a good watering to settle the compost, and then for a considerable time afterwards no further supply will be required. As growth proceeds the soil should be kept moist, and when rooting freely a generous overhead supply should be afforded. Place the plants in the coolest and shadiest part of a Cattleya-house, or in one having intermediate conditions, but on no account grow them in a hot humid atmosphere or they will fail to flower well. Should an increase of stock be desired, lay the old back pieces on a moist surface and after a time new growths will appear on some of them. C. cristata alba should be held over till later.

Cœlogyne Massangeana and *tomentosa* are useful when grown in suspended pans or baskets. They need a similar rooting medium to that afforded C. cristata, but should be placed in a warm house. Much water is needed by these species and by C. Dayana only when the plants are growing freely, at other times a very limited supply will keep them healthy. C. Dayana enjoys abundance of heat and moisture during the growing season now commencing. The inflorescences being long and pendulous, it is necessary to raise or suspend the plants well above the stage. Repot or renew the surface materials as the case demands after the flowers have passed and root action is about to commence, using a similar compost to that recommended above. Spray the under sides of the leaves frequently to prevent red-spider.

Cœlogyne pandurata does not usually produce new roots until the young growths are somewhat advanced. As soon as the roots appear give fresh material for the roots to enter. Plants of this species thrive well fixed on a teak-wood raft, with a few large pieces of crock, and equal parts of peat and moss placed between the rhizomes and raft. Starting with a good length of raft, new material may be added as the plant elongates, tying each new rhizome down to the raft when strong enough to bear the strain. Elevate the raft on inverted pots above the stage in a moderately shaded part of an East-Indian-house. Afford water copiously when roots are developing freely, but after the bulbs are made up decrease the supply until during the autumn and winter months, when an occasional dose will suffice.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Necessity for Promptness.—With the advent of spring the work becomes of such importance that neglect in doing it at the right moment often brings disappointment. From various causes it is sometimes difficult to avoid falling into arrears of work, but the old adage, "Never put off until to-morrow what can be done to-day," is very applicable in gardening, and should be acted upon.

Creepers that were cut back and tied-in early in the year are now making growth, and will require attention. Over-crowding of the young growths should be avoided, and all weakly shoots should be removed. The present is a suitable time to make good any losses, and either of the following species, if planted-out in a warm conservatory, will make an abundance of growth during their first season—Passiflora quadrangularis, Ipomœa Thomsoni, I. paniculata, Aristolochia gigas, A. Sturtevanti, Hexacentris mysorensis, Vitis Voineriana, and Schubertia graveolens.

Cyclamen Seedlings that were potted off into thumb-pots as advised in a previous calendar will be ready for a shift on into a size larger pot. The corms should be kept well above the surface of the soil, and similar compost to that advised for the first potting will again be suitable. The plants should be kept growing for some time in a warm and moist atmosphere, where they can be shaded from the direct rays of the sun.

Bouvardias, Fuchsias, Abutilons, Aloysias, &c., that were placed in heat as advised, will be making growth and roots. If it is desirable to increase the stock, take off cuttings with a heel attached, and insert three or four in small pots filled with old potting soil, plunging them in a bed having considerable bottom-heat. If it is intended to cultivate the old plants again, knock them out of the pots and reduce the soil about the roots, then repot them in pots of a slightly smaller size. Place them in a warm, moist atmosphere, and syringe them frequently until they have made new roots, when they should be afforded another shift into larger pots and be gradually hardened.

Achimenes.—Place a few sprigs of Birch around the sides of the pots to support the growth of the plants; they will then appear much neater than when tied to sticks with raffia.

Aphis.—Keep a sharp look-out for aphis. Houses containing plants should be frequently fumigated with the XL-All Vaporizer at this season.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Border Carnations.—These will soon require to be planted out. They do well in a medium loam inclining to be heavy rather than light. The border will have been prepared some time since by thoroughly mixing with it, two spades deep, a liberal supply of rotten hotbed manure and fresh loam, which should be free from wireworm, adding a good sprinkling of wood-ashes, old lime rubbish, and soot. Let the beds be made about 4 feet wide, and put the plants 12 inches apart. The alleys between the beds may be made 2 feet wide. If two alternate rows of Carnations and Violas of contrasting colour be planted diagonally, the effect will be very good in large borders, especially if the Carnations be supported with spiral wires. Examine Carnations that were planted out last autumn, and make the plants firm in the soil. Fill up any blanks there may be, and apply a dusting of Carnation-manure over the soil, which should be loosened a little with a fork when in a moderately dry condition. Robust-growing varieties, as Duchess of Fife, Viscountess Melville, Mrs. Muir, Dundas, &c., winter well outside. Clove-scented varieties, such as Uriah Pike, are best wintered in pots placed on shelves in a cool well-ventilated house, as they are apt to be affected with "spot" if kept in the open. Queen Alexandra is a fine heliotrope-coloured sport from Uriah Pike.

Calceolarias that were rooted in frames last autumn should now be transplanted into cold pits or temporary structures. Put 6 inches deep of rough leaf-mould in the bottom and 6 inches of fine rich soil on the top. Carefully lift the young plants and plant them 6 inches apart each way. Shade them from bright sunshine until they have become established, then admit air freely; pinch the plants occasionally to keep them dwarf and sturdy. In their summer quarters Calceolarias should be afforded deep loamy soil well enriched with rotten manure, as the plants die away when grown in poor, shallow soils.

Pentstemons and Phloxes that were propagated last summer may now be planted. They require rich and well-prepared soil.

Dactylis glomerata varieties may be divided. Let the bed be enriched with manure, as the plants become rusty on poor soils.

Lamium aureum requires slight shade. The plants may now be divided; also various Sedums, Saxifrages, Polemonium cœruleum var.

Gladiolus.—If these be wanted early they can be forwarded by potting and placing them under glass, planting them out at the end of May. For ordinary planting choose an open situation and rich, sandy soil. Plant the bulbs about 12 inches apart, and cover them with soil 2 or 3 inches deep. G. brenchleyensis has a good effect when springing out from a bed of Gaura Lindheimeri.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Onions [see illustration on p. 203].—The demand for large Onions has increased, and they are now used extensively for culinary purposes. If the seeds were sown early in order to secure large bulbs, and if previous instructions have been followed, the soil must now be made quite ready for the reception of the young plants. Apply a good dressing of soot and wood-ashes, and should the surface be at all uneven as the result of deep cultivation, level it down with a fork to a fine and firm condition. When planting give the plants plenty of room, allowing 18 inches between the rows and 12 inches between the individual plants in the rows. Plant in trenches of sufficient width and depth to freely admit the soil and roots without cramping. Place about 1 inch of the stem below the ground to prevent the plant from being disturbed by high winds. I have sometimes placed a twig of Birch to each plant until it is firmly established. A sprinkling of bone-meal applied in the trenches will favour the growth of the seedlings. The soil round the stems will have to be gradually removed subsequently, and must be entirely cleared away before the bulbs commence to swell. If the weather is dry and warm sprinkle the plants with water in the morning, and again early in the afternoon, and when they are established mulch the soil with specially prepared stable-droppings. These will retain the moisture in the soil, and encourage the roots near to the surface. Quick development in the plants render them less liable to the ravages of the Onion-fly, which gives us very little trouble here.

Potato Planting.—If the soil is in a good and workable condition, push forward the work of planting, carrying it out in the method best suited to the condition of the soil. If this has become well pulverised by early autumn digging (which we find the best), and is of a light and open nature, a Potato dibble may be used. Personally I prefer opening a trench in which the sets are placed at an equal depth and distance apart, according to the variety, to allow full development of top growth. The Potatos when planted in the trench are covered by the soil removed in making the next trench, and so on, leaving a slight ridge to mark the row. In those cases where the ground has not been previously dug, or where the soil is of a heavy nature, plant the tubers as digging proceeds, using the spade to its full depth. As most garden soils will produce good and cleaner crops of Potatos of sufficient size for culinary purposes without the addition of fresh manure, it will be necessary only to apply a good dusting of air-slaked lime as the work proceeds.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Grafting should be commenced as soon as the sap rises freely in the stocks, commencing with Cherries, and proceeding afterwards with Plums, Pears, and Apples. In the case of young stocks, headed down as advised, the process is a simple matter. Level them down to green wood, as a portion of the stock will possibly have died back from the early cut. Dig up the scions carefully, and wash all grit from them; then cut them into 6-inch lengths, using one knife for the rough work, and another for the process of grafting. Tongue (see fig. 88) and rind grafting (see fig. 87) are most suitable for small stocks, and in the former case scions of a size near to that of the stocks should be selected. In cases where the stocks are too large to allow of this, it is important that the bark of scion and stock should meet. The sloping cut made in the scion should not be less than 3 inches long with a reverse cut at the top of the slope to form the tongue. The stock should be cut in a similar manner, with a transverse cut in which the tongue of the scion must be fixed firmly. The scion should be bound tightly to the stock, sufficiently so that an upward pull would not displace it. Cover the operated part with clay, making all as nearly air-tight as possible, then cover with moss. Grafts made near to the ground level may be banked up with soil, and those so treated often grow away most quickly. If much grafting has to be done use grafting wax, made according to instructions given last week; it is much more convenient than clay. Break off a portion of the wax and warm it in an iron pot; then apply the wax with a half-worn painter's brush. Grafts so treated as a rule do not start so freely into growth as those covered with clay, but success is more certain.

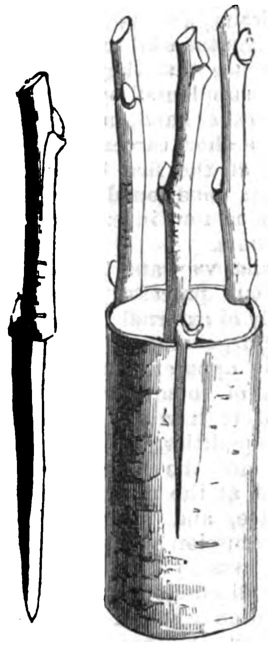


Fig. 87.—Crown or rind grafting.

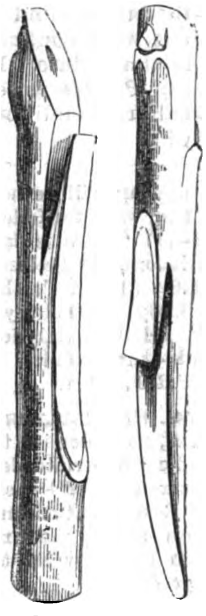


Fig. 88.—Whip or tongue grafting.

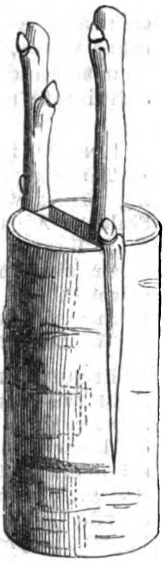


Fig. 89.—Cleft grafting.

Old standard trees which were headed back some time since should now have the wounds trimmed back with a sharp knife or chisel. For the grafting of trees of this description I prefer to use scions of the second year's growth, if they have good dormant wood-buds; failing these, well-ripened growths of the previous year are necessary. For old trees, on which four to six grafts need to be placed on each branch, according to size, I advise wedge grafting, as it produces a better union, and the scions are also better able to withstand strong winds. Whether clay or wax be employed, moss should be used to cover the whole externally, by so doing the scions are kept uniformly moist, and protected from cold winds and hot sunshine.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Early Peaches.—The earliest Peaches will now be stoning and the trees should not be forced severely until the stoning stage is past. Maintain a temperature at night of 55° to 60° and allow a rise of 10° during the day. Patience must be exercised until this trying period is passed. The final thinning of the fruit should then be carried out, and the number to be left on each tree will depend on the vigour of the tree and the condition of its roots. One fruit to each square foot of space upon Peach-trees, allowing Nectarines to be 2 inches closer, may be recommended for healthy trees, and given liberal treatment good average fruits may be expected. Tie down the shoots as they require it and remove any superfluous growths to avoid over-crowding, finally leaving the shoots 6 to 9 inches apart. Stop any shoots that are growing extra strong or remove them altogether in order that there may be an even flow of sap over the whole tree. Afford tepid liquid manure and other stimulants to old trees, also apply a good mulch of short stable manure, care being taken to leave a very little ventilation on at night for the ammonia to escape. Syringe the trees freely twice each day, and close the house early in the afternoon with abundant moisture, occasionally using clear soot-water of moderate strength for damping the surfaces in the house.

Succession Peaches will require daily attention to disbudding and thinning of the fruits as each tree passes out of flower. In some cases a partial thinning of the flowers on the underside of the shoots of weak trees will be beneficial. Disbudding should be deferred for a time on any trees that have been recently removed or root-pruned, and until they are growing freely. A shoot at the base of each piece of last year's wood and a leader are generally enough to furnish the trees with fruit-bearing wood for the following season. As the fruits increase in size these should be further reduced, and do not allow too large a number to remain on the trees for stoning above what are required for the crop, or the object of early thinning will be defeated. Pass the brush over the flowers if the weather be unfavourable for pollination, and fumigate the house moderately should green-fly make its appearance. Do not permit the trees to feel the want of water at the roots or suffer a check from careless ventilation.

Strawberries will become more plentiful during this month, and less forcing will be necessary to swell and ripen the fruit. Later plants will be grown under more favourable conditions, and will set and swell their fruit freely. Ventilation should be increased as the sun gains more power, and the plants will require to be looked over twice daily for the purpose of watering any that require moisture. Syringe the plants freely twice each day except when they are in flower, and apply manure-water liberally until the fruits change colour; then remove the plants to a cooler house, and maintain a constant circulation of warm air. Later plants should be brought in from cold frames as required to keep up a constant supply.

CAMPANULA GLOMERATA.—The *Gartenwelt* of March 4 contains illustrations of a "stemless" form of this pretty species. The stem is so short that the flowers rest only slightly above the rim of the pot in which the plant is growing.

APPOINTMENTS FOR APRIL.

SATURDAY	APR. 1	Société Française d'Horticulture de Londres Meet.
TUESDAY,	APRIL 4	—Truro Daffodil Show (2 days).
THURSDAY,	APR. 6	Linnean Society Meet. Royal Horticultural Society of Ireland Spring Show.
TUESDAY,	APR. 11	Royal Horticultural Society's Committees Meet. National Rose Society's Committees Meet. Devon Daffodil and Spring Flower Show at Plymouth (2 days). Brighton Spring Flower Show (2 days).
WEDNESDAY,	APR. 12	Shropshire Horticultural Society's Spring Show. Chester Paxton Society's Spring Show (2 days).
SATURDAY,	APR. 15	Kidderminster and District Horticultural Society's Daffodil Show.
TUESDAY,	APR. 18	Midland Auricula and Midland Daffodil Society's Show at Birmingham Botanic Gardens
WEDNESDAY,	APR. 19	Darlington Spring Flower Show. Royal Botanic Society's Flower Show. Glamorgan Spring Flower Show. Croydon Flower Show.
MONDAY,	APR. 24	—Easter Monday. Bank Holiday.
TUESDAY,	APR. 25	Royal Horticultural Society's Committees Meet, and National Auricula and Primula Society's Show combined.
THURSDAY,	APR. 27	National Auricula Society's (Northern Section) Show at Manchester (Provisional).
FRIDAY,	APR. 28	—Royal Botanic Society Meet.

SALES FOR THE WEEK.

WEDNESDAY NEXT—
Azaleas, Rhododendrons, Palms, Roses, Fruit Trees, Perennials, Border Plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Roses, Azaleas, Palms, &c., at Stevens' Rooms, at 12·30.

FRIDAY NEXT—
Herbaceous Plants and Perennials, Liliums, Border Plants, and Bulbs, Azaleas, Roses, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Imported and Established Orchids from various sources, Orchids in Flower and Bud, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —46·1°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, March* 29 (6 P.M.): Max. 56°; Min. 47°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, March* 30 (10 A.M.): Bar., 29·9; Temp., 51°. Weather—showery, with occasional sunshine.

PROVINCES.—*Wednesday, March* 29 (6 P.M.): Max. 53°, S.E. Coast of England; Min. 49°, West of Scotland.

Do Varieties Degenerate? THE discussion which took place at the Scientific Committee on Tuesday last on the question of the degeneracy of varieties was very instructive. The subject was introduced by the Chairman, the substance of whose remarks is appended. Mr. A. DEAN opened the discussion with a short paper covering the whole matter at issue, and the speakers included Messrs. PERCEVAL, BAKER, ODELL, WORSLEY, DOUGLAS, GORDON, SHEA, CHITTENDEN, and others, a report of whose remarks will be given in a subsequent issue.

Nothing is more certain than that individuals when no longer in harmony with their surroundings disappear. In the struggle for existence and in the competition with other individuals, the one least well adapted to sustain the onslaught succumbs, or, as the adage has it, the weakest goes to the wall. What is true of individuals must be true of species, which are collections of individuals, and must be equally certain in regard to varieties. But let us suppose that the conditions remain favourable, that no one individual dominates over another, then the balance is maintained —individuals, varieties, species remain as they were.

Although these are truisms, yet every now and again the question is raised—Do varieties degenerate?

Under cultivation every effort is made to maintain the favourable conditions unimpaired, to secure the permanence of the variety, to afford it preferential treatment, and to protect it not only from adverse conditions but from internecine competition.

Hence it is that, on the one hand, certain varieties, such as the Black Hamburgh Grape, the Admiral Curzon and Sportsman Carnations, alluded to by Mr. DOUGLAS in our last issue; the Ashleaf or the Beauty of Hebron Potatos, still retain so much of their pre-eminence that they have not been displaced or supplanted by newer comers.

On the other hand, many varieties appear, have but a short career, and then disappear. Not one of the five hundred varieties of Carnations mentioned in THOMAS HOGG'S catalogue is now in existence, according to Mr. DOUGLAS.

Now what we want to know is, whether a wearing-out process really occurs, independently of external agencies, whether the so-called degeneracy is innate, or whether it is merely apparent, arising from the substitution of some newer variety which is supposed to have, or really does possess, superior qualities.

These are the questions which were discussed at the meeting of the Scientific Committee, and in order to give point to the discussion and to obviate discursiveness, it was judged advisable to confine the discussion, so far as possible, to the question whether varieties propagated by vegetative methods do deteriorate independently of external conditions, and if so, why? For convenience sake, and because Potatos loom largely in the public mind at this time, the illustrations were confined as nearly as might be to the Potato. In other words, Do varieties of Potatos raised from sets and subject to unaltered conditions deteriorate, and if so, why?

LINNEAN SOCIETY.—A meeting will be held on Thursday, April 6, at 8 P.M., when the following papers will be read:—(1) "Intra-axillary Scales of Aquatic Monocotyledons," by Professor R. J. HARVEY GIBSON, F.L.S.; (2) "A Further Communication on the Study of Pelomyxa palustris," by Mrs. VELEY, F.L.S. Exhibition: Pitchers of Nepenthes, with lantern-slides, by Mr. W. BOTTING HEMSLEY, F.R.S., F.L.S.

BEQUEST TO THE ROYAL HORTICULTURAL SOCIETY.—Mrs. JANE BEGLEY, the widow of the late Dr. W. C. BEGLEY, Medical Superintendent of Hanwell, has among numerous other legacies a bequest of £250 to the "Royal Horticultural Society, Chiswick." As the Society has not actually given up possession of Chiswick, the bequest, we presume, holds good.

THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord ONSLOW held sittings on March 21st to the 24th. The following members were present:—Mr. A. S. T. Griffith-Boscawen, M.P. (Chairman), Colonel Long, M.P., Mr. C. W. Radcliffe-Cooke, Mr. Hodge, Mr. Vinson, Dr. Somerville, Mr. P. Spencer Pickering, M.A., F.R.S, the Rev. W. Wilks, M.A., and Mr. Ernest Garnsey (Secretary). The Committee had under their consideration the draft Report prepared by the Chairman.

FLOWERS IN SEASON.—From Messrs. PAUL & SON, Cheshunt, we have received specimens of Eucommia ulmoides, a species remarkable for the large quantities of caoutchouc it contains. It has proved hardy at Cheshunt and at High Beech, as also at Kew, so that there is a possibility of having a hardy rubber-tree amongst us. The new Jasminum primulinum and Carpenteria californica have succumbed this winter at Cheshunt, although the latter had previously lived through several seasons.

—— To Messrs. R. VEITCH & SONS, of Exeter, we are indebted for cut specimens of the deciduous Japanese Magnolia Kobus, with large spreading white flowers, richly perfumed.

MECONOPSIS INTEGRIFOLIA.—There is some doubt as to whether the plant introduced from Central China by Messrs. VEITCH, through Mr. WILSON, is of the same species as that which was figured in the *Flora and Sylva*, and which was, we believe, collected in Tibet. The principal difference is in the stigma, which is sessile in WILSON'S plant, whilst in that pourtrayed in the *Flora and Sylva* the stigma is raised on a long style. It is possible, therefore, that we may have more than one species. At any rate the question will soon be decided, for Mr. WILSON has just returned from China, bringing with him seeds not only of this but of various other species of Meconopsis, besides other plants of great interest, of which we shall hear later on.

HALF HOLIDAY AT KEW.—It is reported that from this date the young gardeners at Kew are to have a half holiday on alternate Saturday afternoons, and only sufficient men will remain on duty to attend to the necessary work.

THE ROYAL AGRICULTURAL SOCIETY announce that an Agricultural Education and Forestry Exhibition will again be held in connection with the Society's show to be held at Park Royal from June 27 to 30 next. The Forestry Department will be organised on the same general lines as last year, and offers of exhibits are invited for the following sections:—(1) Seeds and cones of trees and shrubs. (2) Seedling trees and transplants, consisting of specimens and plants suitable for woods, plantations, coverts, shrubberies, &c.; plants suitable for agricultural hedge-rows, with illustrations of planting; and collections of Willow-plants for industrial purposes (cricket-bats, basket-making, &c.). (3) Woods and plantations, chiefly photographs and diagrams, showing systems of treatment as to mixing, thinning, &c. Photographs of historic or specimen trees. (4) Timbers. Planks and hand-specimens of home-grown woods of various species. Specimens of timber, &c., showing the effects of pruning, injuries, &c. Specimens of timber showing the effects of creosoting and of other methods of preservation. Articles in process of manufacture from home-grown timber. (5) Insects and diseases. Specimens of forest insects and of fungi and their ravages. Characteristic examples of the attacks of game, birds, squirrels, voles, &c. (6) Plans, maps, models, &c., illustrating working plans, forest exploitation, manipulation of timber, &c. (7) Forest and nursery tools, instruments and appliances. Any offers of exhibits or enquiries should be addressed to the Secretary of the Society at 13, Hanover Square, London, W.

FORESTS, WILD AND CULTIVATED. — Dr. AUG. HENRY delivered a very interesting lecture on this subject at a meeting of the Horticultural Club on Tuesday last, when the attendance was much larger than usual. Unfortunately the pressure on our space compels us to hold over our notice until next week.

NICOTINE POISON.—Two well-known firms of seedsmen have been fined £1 and costs for selling a poison called nicotine without having complied with the necessary regulations. The bottle, it was stated, contained enough nicotine to kill 100 persons. It is a pity that the dealers do not take the trouble to comply with a law so evidently framed in the public interest.

James Gordon, the "eminent" nurseryman of Mile End, is mentioned frequently by botanical writers. Peter Collinson (Lysons's *Environs of London*, Supplement, p. 417), writing in 1764, describes him as "most celebrated." Lysons (p. 147) says he first introduced the Sophora japonica into England; and (p. 492) that he had his grounds in the parish of Stratford, Bow, and St. Leonard's, Bromley. He was "well known for his extensive culture of exotic plants." According to the *Annual Register*, he gave his name to the well-known order [genus] of plants called Gordonia about 1776. He is mentioned in Richard Weston's *Critical Remarks on Botanical Writers à propos* of Miller's *Gardeners' Dictionary*. The *Gentleman's Magazine* of 1781 records the death, at Barking, of Mr. James Gordon, senior, the "ingenious and eminent botanist," January 20. The will of James Gordon, nurseryman, Fountainbridge, Edinburgh, was proved April 6, 1788. "*Notes and Queries,*" *February* 11, 1905.

The Shropshire Horticultural Society will hold a Spring Flower Show on April 14 at Shrewsbury instead of the Chrysanthemum Show usually held in the autumn. The Summer Show will be held on Wednesday and Thursday, August 23, 24, in the Quarry grounds, Shrewsbury. The cash prizes offered in the schedule amount to £1100, and in addition a Silver Challenge Vase of the value of 50 guineas for Grapes is offered. Entries for this show will close on August 16, 1905.

Gardening in New Zealand.—A new work on gardening at the Antipodes has been published by Mr. Elliot Stock, entitled *My New Zealand Garden*, by a Suffolk lady. The work is illustrated by views of nooks and corners and remarkable shrubs and trees in the garden.

"The Tropical Agriculturist."—This Journal, hitherto published by Messrs. A. M. & J. Ferguson, of Colombo, has secured to itself a large measure of appreciation for the collection and diffusion of information relating to all descriptions of vegetable produce cultivated in the tropics, together with an abundance of details of importance to planters and commercial men. We now learn that the Journal in question is to be amalgamated with the Magazine of the Ceylon Agricultural Society, and that it will in future be edited by Dr. Willis, the Director of the Botanic Garden, Peradeniya, with the assistance of some of the old staff. The Journal will be published at the *Observer* office as before. Subscribers to the Ceylon Agricultural Society will receive the *Tropical Agriculturist* every month without extra charge.

"The Timber Trades Journal" does not believe in the adage that a big book is a great evil. Its number for March 18 is a bulky one richly illustrated and full of matter of interest to its clients. In addition there are articles which appeal to the general reader, such as those on West Africa, Sweden, and British Colombia. Those who desire to gain some idea of the extent and importance of the timber trade and of the sources whence its supplies are obtained, should peruse this valuable production (Rider & Son, 164, Aldersgate Street).

"Harmsworth Encyclopædia."—This is to be published in forty fortnightly parts at a cost of 7d. each. With 160 pages of illustrated letterpress per part, this cannot be called expensive. It professes to be a history, geography, doctor, lawyer, and business-guide all in one, and scientific information is also included. Judging by the first part the volume will be very serviceable to general readers, but we wish that the compilers had consulted the article "Accent," and afforded to the uninitiated some idea of the pronunciation of unfamiliar words. For instance Abrus, Alcyonaria, Alchemilla, in fact almost all the troublesome words, are printed with no accent or punctuation to indicate whereon the stress should be laid. Some of the illustrations are disproportionately large; the portrait of a distinguished admiral, for instance, takes up a whole page, whilst maps of Africa do not occupy half the space. A scale of magnitude seems generally deficient in the illustrations. This Encyclopædia (*Everybody's Book of Reference*) is obtainable from the Amalgamated Press, Ltd., or from Thomas Nelson & Sons, London.

The Swanley Horticultural College: Cure for "Spot" in Cucumbers.—We have received the following communication from the Swanley Horticultural College, where the means described in the letter are believed to be a cure for this disease. The authorities do not ask £1,000 for the recipe, but only that the process may be so named that the cure may be associated with the College:—"On the first appearance of the spot, immediately remove all affected parts and burn them. Then, on the same evening, apply to the pathways of the house through an extra fine rose the following mixture: To every 5 quarts of water add 1 pint of Calvert's carbolic acid (No. 5), and thoroughly mix acid and water together. This done, the preparation is ready for use. Give the pathway a light damping down, and take great care not to allow the mixture to touch either the plants or the border in which they are growing. We intend to carry our experiments further this season, and try if possible to discover a preventive also. Upon this subject we hope to be able to make a few remarks after the year has further advanced. We shall be very pleased to show any gardener round our crops at any time, in order to bear out our statements."

VEGETABLES.

POTATO-PLANTING.

There is room for much improvement in the manner Potato-planting is generally practised. In order to secure success, a thorough preparation of the ground, an early selection of suitable "sets," and the adoption of the proper manner of planting, are matters requiring the closest attention. A friable soil and one that is well cultivated undoubtedly greatly facilitates planting; but although many growers complain of their soil being unsuited to Potato cultivation owing to its heavy and retentive nature, it must be crude indeed if it cannot be converted into a more suitable state by proper treatment. Such soils, with time and with the requisite attention, may be made to produce excellent crops of vegetables, including Potatos, the retentive nature of such soils, especially in dry seasons, being more favourable to growth than is the condition of others that are light and porous. The land on which my vegetables are grown is of a heavy nature, and with a view of preparing a site for Potatos it was ridged last autumn, and at the present time the sides of the ridges when disturbed crumble into small particles.

It may not be too late even now for those whose ground intended for late varieties is of a heavy nature to form it into ridges, for even a fortnight's exposure to wind and sun will aid the work of planting and will benefit the crop later. Another advantage in ridging heavy ground for Potatos is that the ridges may be left at the time of planting and thus afford protection to the tender shoots from frost, the soil meanwhile being ameliorated by the exposure it receives, and will fall to a fine state when levelled down as the growth and season advance.

The width of the ridges should be regulated according to the variety of Potato grown; thus for most Ashleaf varieties I allow a width of three good spits, or say 27 inches, while for stronger-growing kinds I give more space in proportion to their requirements. The distance to allow between rows requires consideration. The heaviest crop which I have ever seen of the variety Up-to-Date was from plants afforded a yard space between the rows, and even at this distance the roots practically met. It is no economy to plant Potatos thickly, and in gardens where room is limited a greater distance between the rows will not only result in better crops of Potatos, but allow room for planting such crops as Broccoli, &c., between the rows.

Do not permit the "sets" to remain in bins or heaps until they are required for planting. They should be evenly selected, and stood on end in shallow trays, the latter having little blocks of wood at each corner to allow a current of air to pass between them. The trays when filled may be stacked one upon another in a cool fruit-room or in a light airy shed. In such positions the sprouts which form will be strong and sturdy, and when the time arrives for planting several of the trays may be carried on the hand-barrow to the trenches, and the tubers handled without much damage being done. The trays referred to are most useful in a garden, and are easily made. When cleaned they are useful for storing Apples during winter.

The modes of planting vary, and this is noticeable in different districts. On light soil it is a good plan to dig the ground and plant the tubers at the same time. A trowel is preferable to a dibber for use when planting, for when the latter is used a cavity is often left below the tuber. A strong home-made foot dibber is used in some gardens on large breadths of ground that have been dug, the sets being simply dropped into the holes, and the surface of the soil raked over. This is a quick way of planting; but, as stated above, the sets are not at a uniform depth, which is indicated later by the irregular way in which the shoots come through the ground; the sides and bottom of the hole also present a hard surface, which is not so suitable to the sets as when they are resting on and surrounded with friable soil. *Richard Parker.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

Cucumbers without Fertilisation.—I am forwarding by this post two unfertilised Cucumbers. The stigmatic part of flower was cut from the ovary before opening. When growing early Cucumbers I always remove the male flowers so as to increase the fruiting power of the plant, as I have proved on several occasions that fertilisation is only necessary when seeds are required. Why gardeners should encourage male flowers and weaken the plant by fertilisation and the production of seeds when saleable "fruits" only are wanted, I am at a loss to understand. The Cucumbers I am sending were cut from a plant growing in a 6-inch pot. *G. H. H. W.* [The result is strictly analogous to that in the coreless apple. Ed.]

"Black Stripe" in Tomatos.—I have read with great interest the letters from Mr. Ward and Mr. Owen Thomas *re* "Spot" on Cucumbers, and in the hope that it may be of service in contending against this disease, I would like to give you my experience on "Black Stripe" in Tomatos. For some years I have been much worried with this pest among my Tomato plants. Starting five ago with three or four plants it gradually spread until in 1903 it affected 300 plants, or a quarter of the number of plants that I grow. Change of seed, soil, &c., made no difference, the disease being worse in each succeeding year. Thinking that the mischief might perhaps lie in the soil, I cleaned out two of the houses to a depth of 3 feet, and filled the pits with ashes. I then put in good fresh loam, mixed with mellow cow manure, but the plants were just as badly affected as those grown in another house where merely the top soil was removed and fresh put in. Things had got to this stage when I remembered my experience on a Manitoba Wheat farm (where I worked for two seasons for Mr.

G. A. Middleton, brother to Mr. Peter Middleton, who was for many years gardener at Wynnstay, where and under whom I served my apprenticeship), and that was the dressing of seed Wheat with bluestone or sulphate of copper. As the Yankee says, I figured it out in this way, "If a dressing of sulphate of copper on seed Wheat would prevent smut when it was in the ear, perhaps it might have a similar effect on Tomatos." So last spring, when I was going to sow my Tomatos, I got a piece of bluestone about the size of a Walnut, powdered it fine, and put it in a pound jam jar half filled with hot water to dissolve the powder more readily. After it had cooled somewhat, I put in the seed, let it remain there for four minutes, then drained the water off, dried the seed, and sowed it. Now, it is remarkable that last year I had not a single plant affected with any kind of disease, although, with the exception just mentioned, the plants were grown under exactly the same conditions as in the previous year. Whether this immunity was due to the dressing of copper sulphate I, of course, cannot be positive, but there is much to favour such an opinion in the fact that the year before dressing the seed there were 300 plants affected, while the year after there was no sign of disease whatever. I am merely writing this as a suggestion, for, as Mr. Ward says, when one has invested one's savings in a business, any suggestion, however simple, that may help to get at the root of the matter, ought to be thankfully received and carefully considered by all who are thus afflicted. *George Appleton.*

MIDLAND DAFFODIL SOCIETY: ALTERATION OF DATE.—Having ascertained the opinion of some fifty of the principal exhibitors, a large majority of whom consider the present a very early season, we have decided to hold our Daffodil exhibition at Birmingham on Tuesday and Wednesday, April 18 and 19, instead of the later date April 27 and 28. *Robert Sydenham.*

MOLES ATTACKING ROOTS.—We send you a few fruit-tree (Paradise) stocks which have been gnawn at the roots by moles. This is the first time we have had experience of their attacking roots. Perhaps you may have heard of such cases before. *Laxton Brothers, Bedford.* [Is it not the work of a vole rather than of a mole? Ed.]

EXOTIC TREES.—I have read with much interest, in your issue of March 25, Mr. A. C. Forbes's observations on the timber value of exotic trees. The warning he gives is timely, and if I venture to make comment upon the subject it is not from any doubt as to its value. Seeing that of the five Coniferous trees which he cites as producing unrivalled timber in this country—Scots, Corsican, Spruce, Silver, and Larch—only the first is indigenous, and the remaining four are exotic, it does not seem to follow that it is vain to expect good results from trees obtained from the American continent. Mr. Forbes speaks disparagingly of Thuya gigantea, but has it ever received a fair chance in this country? Has it ever been grown under proper forestry conditions? Personally, I have only seen it in the form of arboricultural specimens, and none of Mr. Forbes's five chosen Conifers produce good timber results when so grown. I shall not live to judge of the results from seven acres which I planted last year with this Thuya; but I would remind Mr. Forbes that nobody in this country realised the value of Larch as a timber producer until the Duke of Atholl had planted it very extensively at Dunkeld. What is to be desired is that we should abandon the practice of dotting our lawns and pleasure-grounds with isolated specimens of trees, the nature of which is to grow in high forest, and apply ourselves to testing the most promising species in masses. The Douglas Fir has established its reputation as a most valuable timber tree in the few places where it has received proper sylvicultural treatment. Two species which I should like to see submitted to a similar test are Pinus monticola, which is far superior to the Weymouth Pine in maintaining a single leader and in resisting storm; and Picea orientalis, which, though reputed to be of slow growth, responds to a moist climate and cool soil with an annual growth in height of 2 or 3 feet. Abies nobilis also seems to deserve its specific name. One would like more information about the quality of its timber. Cedrus atlantica and libani we never see except as lawn specimens, but the quality of the timber and rapidity with which it is formed are such as to command attention. Abies Nordmanniana I shall deal with no more, it is so peculiarly subject to parasites. I have said no word about deciduous exotics. We can beat all the rest of the temperate-zone timber of that class if we resume right treatment of our woodlands. *Herbert Maxwell.*

MEASUREMENTS OF CEDARS.—At Campsey Ashe, Suffolk, there are eight fine Cedars in the grounds, and five of the finest are in a group too close to the mansion, and have fine clean trunks. The measurements of the three finest are as follows:—

No. 1 at the ground measures 20 feet 6 inches; at 3 feet from ground, 20 feet; at 6 feet from ground, 19 feet 6 inches; at 16 feet from ground, 18 feet 9 inches; with a clean stem of 18 feet from ground without a branch. Total height of tree only about 45 feet.

No. 2, at 3 feet from ground, 18 feet 9 inches; at 6 feet from ground, 16 feet 6 inches. Total height of tree fully 100 feet.

No. 3, at 3 feet from ground, 18 feet 6 inches; at 6 feet from ground, 17 feet 9 inches. Total height of tree fully 90 feet.

The five Cedars in a group are from seedlings, but, alas! the date of their being planted is unknown.

—— At Bayfordbury, Herts, out of many specimens, three have the following dimensions:—

1. Cedar marked No. 7, girth at 1 foot from ground, 27 feet 3 inches.
2. Marked No. 3, at 3 feet, 19 feet 5 inches; at 5 feet, 19 feet 9 inches.
3. Marked No. 8, at 3 feet, 18 feet 11 inches; at 5 feet, 19 feet 3 inches.

All these Cedars average 94 feet in height. They were all planted in 1765, and are therefore 140 years old. The date of planting is marked on a stone ball at the base of each tree. *J. R.* [It is interesting to add that seedling Cedars come up abundantly in the adjoining lawn and paths. Ed.]

CAMELLIAS OUT-OF-DOORS.—We so seldom see good beds of Camellias outside that I thought it would be interesting to mention that at present (March 15) we have some fine plants of C. nobilissima with several beautiful white flowers fully expanded, and a quantity of buds opening on each. Camellia imbricata rubra and C. Donckelaarii are just showing colour, and will soon be covered with flowers. All other varieties are thickly studded with buds, and give promise for a fine show of bloom. Surely this is early for outdoor Camellias? *A. C. Smith, Lydhurst Gardens, Haywards Heath, Sussex.*

RAISING APPLE STOCKS FROM CUTTINGS.—I am sending some pieces of Apple wood for your inspection. You will notice a number of protuberances or aërial roots, which in the early stages closely resemble the galls caused by American blight. It seems only to occur in certain varieties, such as Marlin, Broadlin, Stone Pippin and Green Pippin. I was recently shown some young trees said to be grafted on the French Paradise stock with similar protuberances on the stocks only. Amateurs and cottagers in this district often root pieces of branches from 2 to 3 feet in length cut from varieties producing these protuberances. These cuttings quickly root and form quite strong trees. They are headed back the following winter and used as stocks. Some varieties of Apples, such as Golden Noble and others, do not appear to succeed when grafted on these stocks, but I have seen Warner's King, Bramley's Seedling, Ecklinville, Annie Elizabeth, Beauty of Bath and other varieties doing well and bearing excellent crops. Are the trees producing these protuberances of different variety to the ordinary garden Apple, and would a mild atmosphere be conducive to the formation of these aërial roots? If would be interesting to know if these stocks have been tried with success by any good fruit-grower, and whether found to be of use as such. Nothing interests amateurs and cottagers more than producing their own stocks and grafting their own trees. I should also like to ascertain if trees grafted on these stocks will continue to fruit for any length of time. As far as I can find locally they are a decided success, and the trees last in bearing for a considerable period. I believe Winter Pearmain also produces these protuberances, but I cannot confirm this. *J. O. W.* [The "burr knot" Apples of which you send specimens are not uncommon. Ed.]

APPLE LORD BURGHLEY.—I agree with Mr. Easter concerning its qualities. As a late dessert Apple I think no late variety can approach it for flavour. It also keeps fresher in appearance than any other dessert Apple with which I am acquainted. Court Pendu Plat and Cockle Pippin are also very satisfactory late varieties, but both are very much given to shrivelling. Lord Burghley does very well with us in Cheshire, growing strongly and freely in rather light soil, and it is a good cropper. *J. Thompson, Delamere House Gardens, Cheshire.*

RIPERSIA TERRESTRIS.—In your issue of March 26, 1904, in reply to a question of mine, you state that the insects Ripersia terrestris were first discovered in this country, near London, in the year 1901. From what I can gather it had been known here for some years before that date. I made inquiries, and Mr. Crump, head-gardener here for many years, writes—"I cannot say exactly when the insects were first discovered, but I think quite ten or twelve years ago. It caused me some anxiety when I first discovered them, but as time went on I found no ill-effects to the plants from their being there." *Geo. A. Head, The Gardens, Kingsdon Manor, Taunton, Som.*

MANURE FOR PEACH-TREES.—I am surprised to learn from "A Reader" of injury being done to Peach-trees by the application of farmyard-manure-water. During the so-called resting period the roots are always active, though not to the same extent as when the tree is in full foliage. Root action being slow during the winter months, the better the quality of matter absorbed by the roots the better yield of fruit may be expected in the following summer. Not only that, but by using manure-water for the border the soil is enriched to no small extent, and valuable food is afforded for the roots to seize on and benefit by when the tree is in full crop, and needing something more than "a light gravelly soil" could give to it. I would recommend the frequent use of manure-water all the year round, not only on medium soils, but especially on such a soil as "A Reader" describes. Again, he advises that manure-water should only be given to a tree carrying a full crop. Would it not be better to give a tree unable to carry a full crop special treatment, and so try to build up for it a constitution capable of bearing the strain of a full crop the following year? Of course there is always the possibility of a misuse being made of manure-water. It should not be applied to a border when by repeated applications the soil becomes sodden and soured. One extreme is as bad as the other. *C. W. Muir, The Horticultural College, Swanley.*

—— I have frequently applied liquid-manure during the winter months to Peach and other fruit-trees occupying walls having south, west, and east aspects, in preference to allowing the valuable liquid to overflow from the tank into the river close by, and with the best results in the production of vigorous growth and of heavy crops of fine fruit. When, during wet weather, the drainings from the manure filled the underground cement tanks to overflowing, two or three water-tubs were brought into use, and the dark-brown liquor was carted to the several fruit-trees, and applied at the roots; the Peach and Nectarine-trees receiving an application first, afterwards the Apricots, Green Gage, Plums, &c. Fruit-trees cannot be said to be absolutely at rest during the interval that elapses between the shedding of the leaves in autumn and the buds pushing into growth in spring. They are therefore capable of assimilating to some extent the nutriment thus applied, and benefiting thereby. Moreover the ground in which the roots are growing is considerably enriched by the manurial properties, and this the trees will benefit by as soon as active growth begins. "A Reader" says, at p. 189, that "such manure-water is too rich in nitrogen for Peach and Nectarine-trees when in a dormant state, that it is apt to harm the fibres, and excite the growth of the tree too much in spring." I do not think there is anything in the way of practical fact to support this supposition, which appears to me to be more imaginary than real. However, as a rule, liquid-manure is scarce in most gardens, and the supply does not admit of its being applied at the roots of Peach-trees until the process of stoning is completed, which is the "time-honoured" period for applying liquid-manure at the roots and onward until the fruits approach ripening. But it does not follow that judicious applications at short intervals from the flowering stage up to as well as after the stoning of the fruit would not result in even heavier crops of larger individual fruits, than from trees which had only been watered with liquid-manure at short intervals after the stoning of the fruit. Any grower of Peach-trees can test the efficacy of this statement for himself by adopting this plan now the trees are in flower. A reader says that "liquid-manure should only be applied after the stoning is completed, and then only if the tree is carrying a full crop of fruit." Why should not a tree carrying only a light crop be given the same encouragement to ripen a satisfactory crop as that accorded to the tree carrying a full one? True, the latter requires generous feeding at the roots to enable it to swell the numerous individual fruits constituting a "full crop"; but the same generous treatment afforded the tree carrying a light crop will result in the production of much larger and finer fruit than would otherwise be secured. I wish it to be distinctly understood that it is only when the liquid-manure, i.e., the drainings from manure-heaps, would be otherwise wasted that I advocate its use on fruit-borders during the late autumn and winter months. Where there is sufficient tank space to store such drainings until the trees are in active growth, by all means reserve the supply of liquid-manure until that period. *H. W. Ward.*

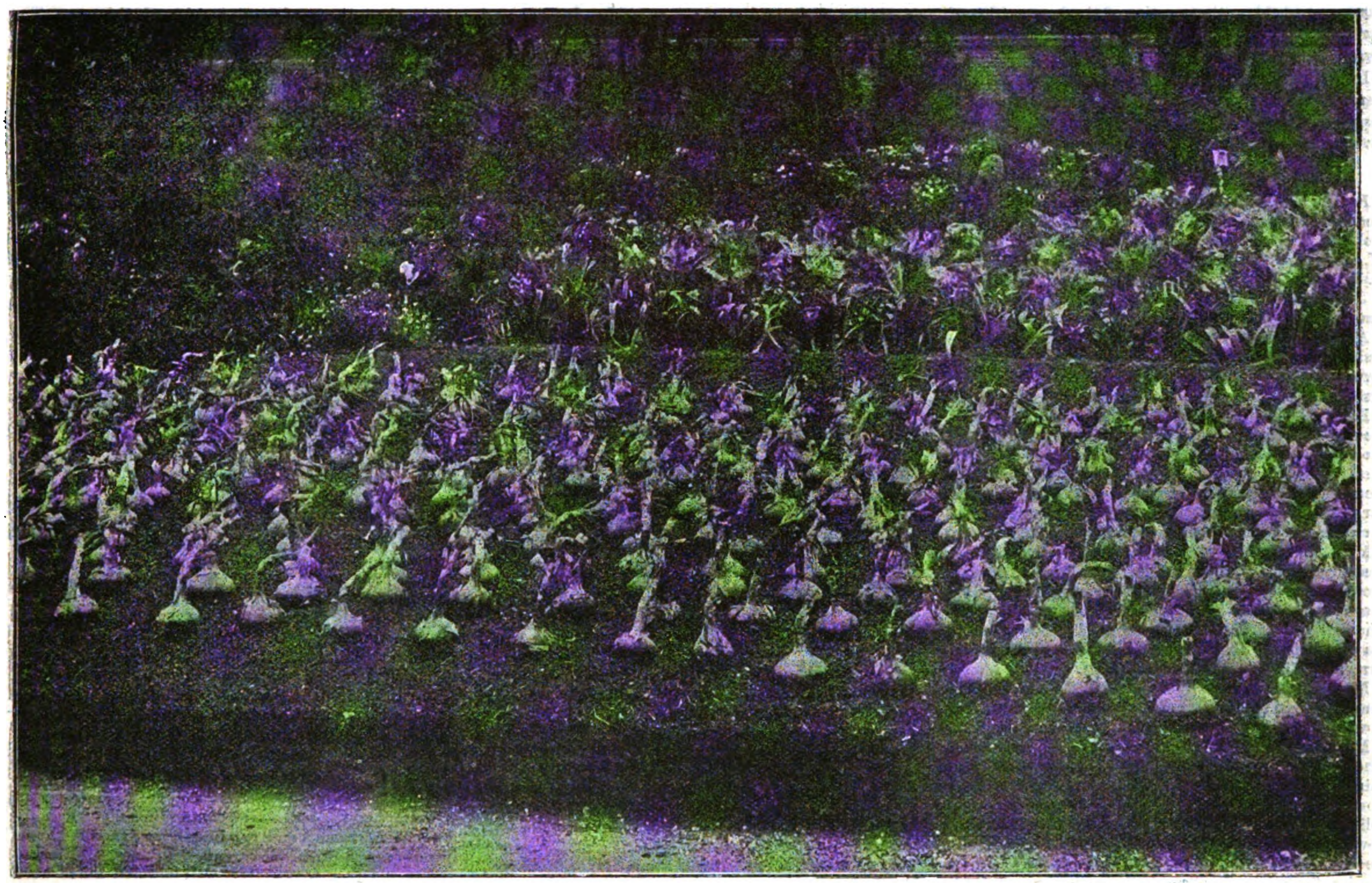


FIG. 90.—BED OF ONIONS GROWN BY MR. W. FYFE, LOCKINGE GARDENS, BY A SYSTEM OF CULTIVATION DESCRIBED IN THE CALENDAR ON P. 199.

TRANSPLANTING TREES.—During the late autumn, winter, and until quite recently, we have been busy moving trees of sufficient weight to necessitate some ingenuity in the way of labour economy. For a small transplanting machine we improvised the wheels and wood framework of a water-barrel by removing the tub and substituting a piece of strong sacking, which was fastened to the framework at both ends and sides. This formed practically a sort of hammock, in the top of which the plants or trees were placed. During my early period at Combe Abbey there was much transplanting of trees, and for this purpose I had a machine especially constructed. I obtained the idea from a figure by the late Mr. McNab, of the Edinburgh Botanic Gardens. This I showed to a local wheelwright, and asked him if he could construct a machine after that pattern, calculated to lift trees of from 5 to 18 cwt. in weight; this he accomplished most successfully. There was no axle, a pair of strong arms being securely fixed upon the side pieces of the wooden frame, and upon these the wheels worked. The framework at the end next to the handles was permanently fixed, but the tie-piece at the opposite end was made so that it could be removed. Two pairs of portable rollers, each about 5 inches in diameter, were placed on the framework, two at either end. When the tree was ready for removal the two rollers and the portable tie-piece were lifted off and the machine placed so that the tree was within the framework. A couple of strong ropes were carried beneath the bole of the tree and fastened to the rollers at either end. Iron handspikes were next placed in holes provided in the rollers, and the ropes then wound sufficiently to admit of the tree being carried to its new quarters. A machine of this kind is always useful about an estate where heavy weights, such as stone, have often to be shifted. Tree lifters are often required, and ought to form part of every large garden equipment. *W. Miller, Berkswell, Warwickshire.*

THE ROSARY.

PRUNING ROSES.

THIS is an operation thought by the novice to be involved in much mystery. An hour's practical instruction by a competent operator, with a little explanation of the reason why, would show that the mystery is imaginary. Such instruction is not to be had by everybody, and then the best thing for the would-be pruner to do is to endeavour to ascertain from books why so apparently an unnatural a procedure is recommended. In pruning he must remember that the knife is used not for the benefit of the Rose bush, but to serve the purposes of the grower, which are often at variance with the natural requirements of the plant. The National Rose Society has issued an excellent little treatise on the subject, which we strongly commend to amateur rosarians. The illustrations are most serviceable. An alphabetical list of varieties is given, and reference is made in each case to the appropriate time and method of pruning. The "Hand-book on Pruning Roses" is distributed to the members of the National Rose Society. Outsiders must seek the intervention of a member if they desire to secure a copy, as no doubt many will do, and should make application (enclosing 2*s.* 6*d.*) to the Hon. Secretary, E. Mawley, Esq., Rosebank, Berkhampsted.

SOCIETIES.

THE ROYAL HORTICULTURAL.

March 28.—On the occasion of the usual fortnightly meeting held on the above date in the Hall at Vincent Square, Westminster, there was a beautiful display of interesting exhibits.

Orchids again constituted an important feature, and awards recommended by the Orchid Committee to novelties included eight Awards of Merit and one Botanical Certificate.

The Floral Committee recommended a First-class Certificate to a supposed new species of Crinum (C. Rattrayii) from Uganda; also three Awards of Merit to other plants.

The Fruit and Vegetable Committee made no award to a novelty.

At the Scientific Committee an interesting discussion was held on the question of the degeneration of varieties, a report of which will be given in our next issue. See also p. 200.

In the afternoon a large number of new Fellows were elected to the privileges of the Society, and a paper on "Bananas," by Mr. Frank Pink, was read by the Secretary, Rev. W. Wilks, M.A.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Geo. Nicholson, J. Green, C. J. Salter, C. Blick, J. F. McLeod, W. Cuthbertson, C. R. Fielder, Chas. Dixon, W. Bain, H. J. Cutbush, C. E. Pearson, E. H. Jenkins, H. J. Jones, W. G. Baker, Geo. Gordon, W. Howe, J. Jennings, R. Hooper Pearson, R. C. Notcutt, Geo. Paul, R. Wilson Ker, and W. P. Thomson.

A very fine variety of Anthurium Rothschildianum, and named rotundiflorum, was shown by Sir Trevor Lawrence, Bt. (gr., Mr. W. Bain), the spathe being much broader than usual, and very prettily spotted.

From Sir W. Plowden's garden, Aston Rowant House, Oxfordshire (gr., Mr. W. H. Clarke), were shown flowers of Sweet Peas. These early-flowering sorts have been obtained by crossing varieties received from Algiers with others grown in this country. The early-flowering habit of the varieties from Algiers has been remarked upon in these columns already.

Mr. Geo. Mount, Canterbury, Kent, again showed a beautiful display of cut Roses. The group, although more extensive, was similar to those presented by this grower at the two previous exhibitions at the Hall. The varieties staged were Catherine Mermet, Captain Hayward, Mrs. John Laing, and Mrs. C. Sharman Crawford (Silver-gilt Banksian Medal).

Mrs. Rolles Hoare, West Grinstead Park (gr., Mr. Smith), presented baskets of Violets, one of which had flowers of a pale bronze colour (Bronze Flora Medal).

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, had a wide range of plants. One group contained standard plants of Pyrus Malus Scheideckeri flowering profusely, also Corylopsis spicata, C. paucifolia, Hydrangea Hortensia rosea, &c.; Primula × kewensis, Rhododendron Veitchii, Crowea angustifolia (see Awards), Clerodendron myrmecophilum, a new species, figured in *Gardeners' Chronicle*, April 9, 1904, p. 237, &c.

Messrs. J. Ambrose & Son, Cheshunt, Herts, showed Carnations, Roses, Narcissus, and other flowers.

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, filled a side table with a display of greenhouse plants, Gardenias, Boronias, Roses, Clematis, Ferns, Astilbe (Spiræa), &c. A batch of Rose Crimson Rambler occupied the centre of the display.

Mr. Chas. Turner, the Royal Nurseries, Slough, put up a group of pot-plants of "Malmaison" Carnations. There were several named forms—Princess May (of deeper colour than the type), Princess of Wales, Lady Rose, &c.

Messrs. Hugh Low & Co., Enfield Nurseries, Enfield, exhibited a number of Carnation flowers.

Mr. Kemp, gr. to Wilberforce Bryant, Esq., Stoke Park, Slough, brought half-a-dozen plants of Hippeastrums (Amaryllis).

Messrs. Cannell & Sons, Swanley, Kent, again showed Zonal Pelargoniums and Cineraria flowers (Silver-gilt Banksian Medal).

Messrs. John Laing & Son, Forest Hill, London, displayed a number of well-flowered plants of Clivias (Imantophyllums).

Two good displays of Cyclamen were shown, the one by Mr. John May, Gordon Nursery, St. Margaret's, Twickenham, and the other by the St. George's Nursery Co., Hanwell. Mr. May filled two tables in the annexe with well-grown plants carrying a profusion of flowers of good form and of excellent colours (Silver-gilt Flora Medal).

The plants from the St. George's Nursery Company, Hanwell, was an object-lesson in good culture, the plants being sturdy, freely flowered, and of the best type with regard to colours and form of flowers. A number of the plants represented the "Papilio" strain (Silver Banksian Medal).

FORCED SHRUBS.

Messrs. R. & G. Cuthbert, Southgate, Middlesex, furnished the concert platform with forced shrubs, interspersed with Palms and Ferns. Included was a white form of Dicentra [Dielytra] spectabilis, also Rhodora canadensis, the latter much resembling an Azalea. Japanese Maples enhanced the effect with their beautiful foliage (Silver Flora Medal).

Messrs. B. S. Williams & Son, Upper Holloway, London, N., put up an excellent group of forced shrubs, having Lilacs, Gueldres Roses, standard trained plants of Prunus and Pyrus species, &c., using Azaleas as a groundwork. The plants were staged to the best advantage, and the group was much admired for its general effect (Silver-gilt Banksian Medal).

Mr. L. R. Russell, Richmond Nurseries, Richmond, put up a group of forced hardy flowering shrubs—Azaleas, Clematis, Lilacs, Viburnum Sieboldi, Gueldres Roses, &c. (Silver Banksian Medal).

Messrs. Wm. Cutbush & Son, Highgate Nurseries, Highgate, N., displayed a large group of forced shrubs. The effect produced was pleasing, bright, and showy. It included the usual members used for forcing, such as Azaleas, Magnolias, Laburnums, Lilacs, Spiræas, &c. Messrs. Cutbush also showed Boronias and Ericas, including types of E. Willmoreana, the best of these being E. W. grandiflora. The same firm also brought Carnations, and an extensive collection of alpine plants similar to those displayed by them at the last meeting (Silver-gilt Flora Medal).

Messrs. Paul & Son, Old Nurseries, Cheshunt, had a small group containing many interesting plants, such as Actinidia Kolomikta, Corokia buddlioides, Deutzia kalmiæflora, an excellent specimen of Andromeda japonica, plants in flower of Lobelia nicotianæfolia, &c. On one of the centre tables Messrs. Paul displayed a new Tea Rose named Warrior. The plants were carrying numerous buds, which develop into moderate-sized blooms of a brilliant rose colour, with a darker base to the flower (Silver Banksian Medal).

Messrs. Thos. Cripps & Son, Tunbridge Wells Nurseries, Kent, arranged a semicircular group of plants, comprised mainly of fancy Maples. Well-flowered plants of Rondeletia cordata were interspersed throughout the group, which was finished off by an edging of small plants of Hypericum Moserianum tricolor (Bronze Flora Medal).

ALPINE PLANTS.

Mr. G. Reuthe, Keston, Kent, put up a group of alpine and hardy plants, Lathræa purpurea was flowering well in a pan. Tecophilæa cyanocrocus was also noticed in flower, the beautiful blue of the petals reminding us of the Gentians.

E. A. Hambro, Esq., Hayes Place, Hayes, Kent (gr., Mr. J. Grandfield), showed a choice collection of alpine plants in pots, most of them being in flower and of exceedingly good growth (Silver Floral Medal).

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, brought alpine plants. Gerbera Jamesoni was noticed in flower, also a good form of Viola cornuta named "Papilio."

Mr. H. C. Pulham, Elsenham, Essex, set up a small portion of a rock-garden, planting suitable subjects in a natural manner.

Messrs. J. Cheal & Sons, Crawley, had several boxes of alpine plants, with shrubs, &c., at the back. Included among the latter were several well-flowered plants of Choisya ternata. Daphne Mezereum was also shown well in this exhibit.

The Misses Hopkins, Mere, Knutford, Cheshire, showed a small collection of alpine plants (Bronze Banksian Medal).

Messrs. G. Jackman & Son, Woking Nursery, Surrey, brought many interesting alpine plants, including the curious Arisarum proboscoideum. Double-flowered coloured Primroses were a feature in this collection.

Mr. A. R. Upton, Guildford Hardy Plant Nursery, Guildford, staged a group of alpine plants. We noticed the beautiful Sanguinaria canadensis in flower. Anemone fulgens was also good in this exhibit (Bronze Flora Medal).

Messrs. J. Peed & Son, West Norwood, London, showed alpine plants in pans and boxes.

Messrs. Gilbert & Son, Dyke, Bourne, Lincolnshire, had a fancy stand filled with Anemones, the display being very fine. The dark scarlet of A. fulgens contrasted strongly with the blue flower of the St. Brigid type; A. Pulsatilla was very fine (Silver Banksian Medal).

Awards.

Crinum Rattrayii.—This supposed new species, closely allied to C. giganteum, was shown in flower by Sir Trevor Lawrence (gr., Mr. Bain). It was introduced from Uganda by Major H. B. Rattray, then of the King's African Rifles at Entebbe, who had bulbs growing in his garden there. In a letter to Mr. James O'Brien, dated November 1, 1902, Major Rattray stated that the species is a garden plant only in the Entebbe district, but that it is indigenous at Lake Albert. The habit of the plant is distinct, as shown on Tuesday, the leaves, which are about 2 feet long and 6 inches across at the widest portion, being much more erect than those of most species of Crinum. The umbel was 2½ to 3 feet high, and consisted of seven pure white flowers with broad segments which recurve very little, if at all, but have a form somewhat like that of a Tulip. The filaments are also pure white, and the anthers of deep brown colour. This inflorescence is the second produced by the plant this season (First-class Certificate).

Crowea angustifolia.—This is an old Rutaceous hard-wooded greenhouse plant from Australia, having sessile, very narrow leaves, and solitary axillary flowers ½-inch across and reddish-pink in colour. Shown by Messrs. Jas. Veitch & Sons (Award of Merit).

Erica Willmoreana grandiflora.—A variety of this popular hybrid Heath, having much larger flowers than those of the type, but of the same attractive colour. Shown by Messrs. W. Cutbush & Sons (Award of Merit).

Tree Carnation "Flamingo."—A variety with deep red-coloured flowers of good form, and possessing non-bursting calyces. Shown by Messrs. Ambrose & Son (Award of Merit.)

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), De B. Crawshay, Francis Wellesley, Jeremiah Colman, R. G. Thwaites, R. Brooman-White, W. Cobb, Harry J. Veitch, W. H. Young, W. Boxall, W. H. White, J. Charlesworth, J. Douglas, T. W. Bond, H. J. Chapman, H. T. Pitt, Harold Morris, H. A. Tracy, N. C. Cookson, H. Ballantine, F. W. Ashton, F. Sander, and W. A. Bilney.

Baron Sir H. Schröder, The Dell, Egham (gr., Mr. H. Ballantine), was awarded a Silver-gilt Flora Medal for a fine group, the centre of which was composed of rare Odontoglossums, including the purple-blotched O. Pescatorei Veitchianum and O. P. Schröderianum; O. × elegans, the rare O. Schillerianum, O. × Coradinei, O. × Wilckeanum, O. × Adrianæ varieties, and some fine forms of O. crispum. At each end were selections of the best Dendrobiums, including Dendrobium nobile album and the fine D. n. Schröderianum, white tipped with pink, and with claret-coloured centre. Other remarkably well-flowered kinds were forms of D. × splendidissimum, D. × dellense, &c.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), was awarded a Silver-gilt Flora Medal for a group of rare Odontoglossums, three of which secured Awards of Merit (see Awards). Among them were several finely-coloured Odontoglossum × ardentissimum, several grand examples of O. Pescatorei, one being the pure white form; good O. crispum, including the spotted varieties Amy, Sibyl, xanthotes, and tesellatum; O. triumphans latisepalum, O. × Coradinei rosefieldiense, and other good Odontoglossums; several hybrid Lælio-Cattleyas, Cypripedium × Schofieldianum superbum, Dendrobium × Sibyl and D. × Cybele Oakwood variety, the latter having purple lines on the lower sepals like D. nobile burfordiense.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. H. T. Thurgood), secured a Silver-gilt Flora Medal for a specially interesting group composed almost entirely of species and fine varieties, with but few hybrids. The large-flowered Cattleyas were well represented by fine forms of C. Trianæ, the best of which was C. T. "Our King," a large and finely shaped rose-coloured flower with claret-coloured front to the lip and a distinct feather of the same colour on the petals. The showy Odontoglossums included good O. crispum, O. Pescatorei, O. Hallii, O. Harryanum, and others. One of the finest was the pure white O. crispum xanthotes "Snow Queen," having a few orange-coloured spots, and which had previously secured an award. The front of the group was bright with yellow Oncidium concolor and scarlet Sophronitis, and there was a varied selection of good Cypripediums, Miltonia Roezlii, Epiphronitis × Veitchii, &c.

Messrs. **Sander & Sons**, St. Albans, were awarded a Silver Banksian Medal for a good group, in which were several very fine Odontoglossums, the best being O. crispum Milky Way, a large rose-tinted flower with distinct reddish blotchings on the sepals, the petals having two-thirds of the central area densely spotted with small red-brown spots. Others noted were Odontoglossum × elegans, Cœlogyne speciosa alba, a large specimen of Dendrobium densiflorum, several good hybrid Phaius, finely-coloured Lælio-Cattleya × bletchleyensis, &c.

Messrs. **Charlesworth & Co.**, Heaton, Bradford, were awarded a Silver Banksian Medal for a fine group, principally hybrids. Among the best were Cattleya × Empress Frederick variety aurea, a fine rose-coloured flower, the labellum, except the rose margin, being of a rich orange tint: Lælio-Cattleya × Veronique (L. × cinnabrosa × C. Mendeli), a pretty cream-white flower with rose markings on the lip; L.-C. × Dominiana, L.-C. × Mercia, L.-C. × callistoglossa, L.-C. Haroldiana, some fine forms of Cattleya × Enid, and other hybrids. The Odontoglossums were represented by good O. crispum, one of the most interesting being O. c. Lady Molly, a good white flower with brown blotches on the petals, the bases of each of which displayed yellow ground colour, with dark lines in imitation of the crest of the lip. Among the hybrid Odontoglossums the most interesting was O. × Lairessei Heaton variety (Edwardi × Cervantesii roseum). The branched spike had flowers rather larger than those of O. Edwardi, of a pale rose-pink with heavy markings of dark purple on the inner parts of the segments.

Messrs. **Hugh Low & Co.**, Enfield, staged a group made up of varieties of Cattleya Trianæ, C. Schröderæ, C. Schilleriana, Cypripedium × Winnianum, and other Cypripediums; Miltonia × Bleuana, Dendrobium × Sibyl, D. × rubens, &c.; and a pretty rose-tinted form of Mormodes buccinator.

F. A. **Bevan**, Esq., Trent Park, Barnet (gr., Mr. Parr), sent Odontoglossum × elegans Trent Park variety, a good, large flower.

Mr. H. A. **Tracy**, Twickenham, showed Cypripedium × Wormsiæ (Charlesworthii × villosum), a large flower with fine rose-coloured dorsal sepal.

Mr. H. **Whateley**, Kenilworth, showed Odontoglossum crispum Mabel Whateley, a remarkably finely-blotched flower which had previously secured an Award of Merit.

M. **Chas. Vuylsteke**, Loochristy, Ghent, staged a small collection of hybrid Odontoglossums.

Awards of Merit.

Odontoglossum crispum Prince Leopold," from **Norman C. Cookson**, Esq., Oakwood, Wylam (gr, Mr. H. J. Chapman).—A very pretty and distinct variety with French-white flowers beautifully spotted with red-brown, the sepals having large blotches, and the petals clusters of many smaller spots. The flower, which is round and with broad segments, has fringed petals and lip. It was first shown by Messrs. **Sander** at the Ghent Quinquennial Exhibition.

Odontoglossum × *ardentissimum* "*Doris*," from **Norman C. Cookson**, Esq.—A fine flower of the same general features as the form originally Certificated, the greater part of the flower being purplish-crimson.

Odontoglossum × *ardentissimum Sibyl*, from **Norman C. Cookson**, Esq.—Flowers of the largest of its class; white, evenly spotted with conspicuous purplish-crimson spots.

Odontoglossum × *Adrianæ aureum*, from Baron **Schröder**, The Dell, Egham (gr., Mr. Ballantine).—A very fine variety with light yellow ground colour, spotted with red-brown.

Cœlogyne Lawrenceana, from Sir **Trevor Lawrence**, Bart., Burford (gr., Mr. W. H. White).—A large-flowered species of the group Filiferæ, and allied to C. speciosa and C. Micholitziana. Sepals broad, yellowish, petals narrow, tinged with brown; lip yellowish at the base and side lobes, and bearing ridges of brown papillæ. Front of lip pure white.

Cœlogyne speciosa alba, from Messrs. **Sander & Sons**, St. Albans.—In this the brown colour usually seen in the species is suppressed. Sepals and petals yellowish; lip white with a salmon-coloured base.

Dendrobium × *Haywoodiæ* (splendidissimum × Findlayanum), from Mrs. **Haywood**, Woodhatch, Reigate (gr., Mr. C. J. Salter).—Flowers large like that of D. × splendidissimum, but with a rich orange labellum with chocolate base, and much resembling those of a very large D. × Schneiderianum.

Odontoglossum × *ardentissimum* "*Lamus*," from Messrs. **Jas. Veitch & Sons**, Chelsea.—A pretty flower, white tinged with purple at the back and heavily marked with purple. Another pretty variety named "Melo" was also shown.

Botanical Certificate.

Dendrobium moniliforme (japonicum), from Messrs. **Wm. Cutbush & Sons**, Highgate Nurseries. The well-known dwarf Japanese Dendrobium with white flowers. Messrs. **Cutbush** state that it thrives outdoors as a hardy plant in shady and very sheltered situations.

Narcissus Committee.

Present: Mr. H. B. May (Chairman), and Messrs. G. H. Engleheart, E. Willmott, T. Eugene Bourne, Chas. T. Digby, E. A. Bowles, W. Poupart, Jas. Walker, W. M. Copeland, J. Pope, G. Reuthe, J. D. Pearson, P. R. Barr, R. Sydenham, W. T. Ware, G. S. Titheradge, S. Kingsmill, R. W. Wallace, C. H. Curtis.

What may be regarded as the first exhibition of Narcissi this season brought several good collections from the leading growers, most of the flowers having been grown under glass, excepting probably the collections from Penzance and Ireland.

Messrs. **Barr & Sons**, Covent Garden, had a representative collection, including such fine varieties as Mdme. de Graaff, Maximus, Gloria Mundi, Dandy Dick, one of the incomparabilis group with richly-coloured cup; M. J. Berkeley, Weardale Perfection, and others. Among the newer kinds were Salmonetta, with salmon-stained crown; Apricot, a trumpet variety with apricot tone; Bridal Veil, a pretty drooping white flower; Brilliant (incomparabilis), with long orange-scarlet cup and crown; Duke of Bedford, a fine bicolor; Maggie May, Lucifer, King Alfred, Peter Barr, White Queen, and others (Silver Flora Medal).

Several handsome vases of a rich yellow self Ajax came from the raiser, Mr. **Kendall**, Newton Poppleford, Devon. It is a noble sort, fine in colour and suggesting as it were a good ideal for future operations.

Messrs. **Ambrose & Son**, Cheshunt, set up a large group, chiefly of Emperor, Barri conspicuus, Horsefieldi, and others, in market-like bunches and in other ways.

From Ireland came a new exhibitor in the person of Sir J. **Gore-Booth**, Bt., Lissadale, co. Sligo. Some of the varieties were exhibited in especially good condition. That of Stella superba, for instance, we have never seen so fine. Others were C. J. Backhouse, Minnie Hume (a pretty sort), Seagull (with yellow cup), and Albatross (with richly-coloured orange cup). These two, so beautiful and distinct, came from the same seed-pod. Incomparabilis Beauty, Victoria, M. J. Berkeley (very rich in colour) were shown in excellent form (Silver Flora Medal).

From Birmingham Mr. **Robert Sydenham** brought examples of Narcissi grown in the cocoa-fibre preparation and in bowls, together with a large array of good varieties. Empress Victoria, Golden Spur were all noted in the fibre preparation, the flowers being good in every way. Catherine Spurrell, Glory of Leiden, Stella superba, King Alfred, and Golden Bell, a rich yellow Ajax kind, were also good. A set of the fragrant polyanthus kinds made a margin to the entire group.

From Rosemorran, Gulval, Penzance, Mr. **Chas. Dawson** brought many exquisite sorts, arranged, not in the oft-repeated crowded bunches of which one soon tires, but in the much more artistic way of twos or threes, when every flower is seen at its best. We much admired this set of novel and choice varieties. Note was made of Homespun, a refined Sir Watkin with a somewhat similar tone to that of Frank Miles, in which the roundly-ovate segments stood out in perfect form. Red Eagle, with flat, inch-wide, flame-red cup; Mermaid, of the White Queen type; Horace, perhaps the finest poeticus yet seen; Pilgrim, a fine white Leedsii, with a large lemon cup; Phantom, a big improved bicolor grandis; Firebrand, with an intensely coloured cup richly coloured to its very base; Gleam, a good poeticus; and Sea King, a sort of white giant Johnstoni, are some of those in this group (Silver Banksian Medal).

Miss **Currie**, Lismore, Ireland, had a large array of made-up bunches; the blossoms, obviously from the open ground, had suffered from storms. Michael Foster, Queen Bess, C. J. Backhouse, Sir Watkin, Maximus, the double Cernuus, and King Alfred, were among those noted in this group.

Mr. G. **Reuthe**, Keston, Kent, also staged Daffodils in many kinds, and we noted Fairy Queen, C. J. Backhouse, Glory of Leiden, Mrs. Walter Ware, &c, among the numerous varieties (Silver Banksian Medal).

Award of Merit.

Narcissus Leedsii Ariadne.—This beautiful variety may be regarded as a much-improved Minnie Hume, with large, somewhat flatter, more spreading crown, which is about 1½ inch across, and prettily frilled near the margin; white, and possessing much elegance. These Leedsii forms are very pleasing when seen without spot or blemish. From Messrs. **Barr & Sons**.

Fruit and Vegetable Committee.

Present: A. H. Pearson, in the chair; and Messrs. O. Thomas, C. Foster, J. Jaques, J. Willard, F. Q. Lane, H. J. Wright, H. Parr, A. Dean, S. Mortimer, Ed. Beckett, Jos. Cheal, Jno. Lyne, and Geo. Reynolds.

Several seedling varieties of Apples were submitted to the Committee, but none was given an award. "Crawley Reinette," a fruit of rather more than average size and of good appearance, was shown by Messrs. **J. Cheal & Sons**, Crawley, Sussex, who had also "Buxted Favourite," a very bright-looking Apple, of moderate flavour.

Mr. **Robert Fenn**, Sulhampstead, Reading, exhibited the variety "Pay the Rent," large yellow-coloured fruits much marked with small russety spots. Fruits of the well-known Sturmer Pippin were shown by Mr. J. **Crook**, Forde Abbey Gardens, Chard.

English-grown fruits of Newtown Pippin came from H. H. **Raschen**, Esq., Sidcup, Kent; and American-grown fruits of the same variety from Mr. A. **Dean**.

Several fruits of "Stone" or Cluster Golden Pippin were shown from Lord **Ilchester**'s garden at Holland House, Kensington (gr., Mr. C. Dixon). These small, exceedingly hard, yellow-coloured fruits, freely marked with russet, were gathered from trees more than 150 years old.

Messrs. **J. Cheal & Sons**, Lowfield Nurseries, Crawley, staged nineteen baskets of Apples. Several of the varieties shown have been distributed by Messrs. **Cheal**, including Atalanta, Paroquet, Armorel, and Crawley Reinette. The last-named variety is said to be a prolific cropper, and is recommended for cultivation for market supply, but the flavour is only moderate (Silver Knightian Medal).

Mr. E. W. **Caddick**, Caradoc, Ross, Herefordshire (gr., Mr. M. Roe), staged thirty-two dishes of Apples. They were a meritorious lot, and had been kept in an almost perfect condition, the fruit showing scarcely any signs of shrivelling (Silver-gilt Banksian Medal).

Excellent bulbs of Onion Ailsa Craig were shown from Sir **Henry Peto**'s garden, Chedington Court, Crewkerne, Somerset (gr., H. Birkenshaw). The seeds were sown on February 4, 1904, and were planted out-of-doors later in the season, as recommended in the Calendar on p. 199. No liquid or artificial manures were applied.

Lecture on Bananas.

At the afternoon meeting a paper, by Mr. Frank Pink, on "Bananas, from a Commercial Point of View," was read by the Rev. W. Wilks. The lecturer pointed out that until about four years ago the monopoly of the Banana business was held by the Canary Islands. Since that time the West Indian trade in the fruit has been successfully encouraged by the Government's giving a subsidy for a direct line of steamers running to and from Jamaica, and each bringing not fewer than 20,000 bunches every fortnight. Other lines now run steamers specially equipped for this purpose, and without receiving subsidies. Bananas are also imported to England from other West Indian Islands and British Guiana. The lecturer described the different varieties to be seen in British markets, including the "Musa Cavendishii," the "Gros Michael," and the "Claret." Those from the Canary Islands are Musa Cavendishii, which grows from 10 feet to 12 feet high, and has very delicate fruit, although possessing thick skins. The flavour is rich, and the fruit is generally preferred to the Bananas received from Jamaica, &c.

"Gros Michael," from Jamaica, produces longer bunches (hands) and the fruits are less good in flavour. Contrary to those from the Canary Islands, these fruits, being less delicate and harder, are shipped to this country without having to be packed in crates. The best-flavoured Banana occasionally to be seen on the market has fruits with claret-coloured skins. The "hand" bears very long "fingers," but these are few. The fruits are generally sold at 2*d*. each, and they are well worth the extra price given for them. Bananas produce from 200 to 300 bunches of fruit per acre at a cost of from £4 to £5 per acre; but the cost of freight to this country is four or five times greater than the worth of the fruits in the West Indies. The transit from the Canary Islands occupies from five to seven days, from Barbados six to eight days, from Jamaica twelve to fourteen days, and from Costa Rica fourteen to seventeen days. Specially-constructed steamers are capable of carrying 35,000 to 45,000 bunches of fruit. In Jamaica and Costa Rica the fruit is purchased from the growers by an American Trust, who send the riper fruits to America and the less ripe fruits to England. In British Guiana, Trinidad, and Barbados, the grower packs his own fruits and then hands them over to the Imperial Department.

The methods of collecting, shipping, and transport were described at greater length than is possible to mention here, and special reference was made to the fostering care exercised on the trade by the Imperial Department of Agriculture in the West Indies. The temperature of the "hold" in the vessels has to be maintained between 55° and 70°. If it is desired to determine whether particular fruits have come from the Canary Islands or from the West Indies, examine them, and if the fingers are long, somewhat pointed, and strongly marked at the angles, they are from the West Indies; but if the skins are smoother, more rounded at the ends, with a little cotton-wool adhering, they are Musa Cavendishi, from the Canary Islands.

COLONIAL EXHIBITION.

March 30, 31.—The second exhibition of Colonial-grown fruits and other products, inaugurated by the Royal Horticultural Society, was held on the above dates in the new Hall. A miscellaneous display of subjects resulted, ranging from bags of Cotton to choice fruits, and from native garments to pickled vegetables. There were numbers of tinned, bottled, dried, and other preserved fruits and vegetables; Tobacco and Sugar in both the raw and in the manufactured condition; Corn from Rhodesia, Apples from Nova Scotia, Bananas with red-coloured skins; Yams, Papaws, Eddoes, and a host of other things that are everyday commodities with our Colonial friends. In addition to the above there were grand displays of British-grown Apples and Pears exhibited by some of our leading growers, while splendid examples of home-grown Oranges, Lemons, and other members of the genus Citrus, were also to be seen.

Messrs. **James Philip & Co.**, 4, Fenchurch Buildings, E.C., put up an extensive exhibit of West Indian products, somewhat similar to that displayed by them at the show held in last December. Most of the commodities displayed were such as are met with in provision shops, the raw material in most instances being staged with the finished articles (Gold Medal).

The Royal Mail Steam Packet Company staged a large number of West Indian fruit, vegetables, preserves, &c. Bananas, in which the company have a large carrying trade, were made a feature. One variety displayed was claret-coloured, and of excellent flavour (Gold Medal).

The Agent-General for Nova Scotia sent forty dishes of Apples. We were struck with the pleasing appearance of those labelled Fallawater, Ben Davis, and Mann (Silver Knightian Medal).

The British South African Company, Rhodesia, put up a miscellaneous group, comprising Tobacco, Corn, Cotton, Flax, Rubber, Fruit and other products of the colony (Gold Medal).

South Africa was further represented by the Fruit Exporters' Association of South Africa, whose exhibits from various members of the Association were highly meritorious. Apples, Pears, Peaches, Plums, Nectarines, Grapes, &c., were exhibited in first-class condition, those from the Hex River Company, Cape Colony, being splendid. Some of the varieties, such as Louise Bonne Pears and Blenheim Pippin Apples, were easily recognisable, while others, such as those labelled King Pippin, are entirely different in character. The whole of the produce from the Hex River Company was first-class, and the judges awarded the collection a Gold Medal.

An Apple from South Africa named Jonathan has a most exquisite appearance, such as might be given to a wax model. We were informed that its flavour surpassed, if possible, its appearance.

Messrs. **Pink & Son**, Portsmouth, staged five bunches of Bananas; and the **Army and Navy Stores**, Victoria Street, Westminster, made an extensive display of Colonial fruits and provisions.

As already mentioned, home-grown Oranges, &c., were a feature. Messrs. **Rivers & Son**, Sawbridgeworth, staged a collection of Oranges, having fruiting trees in pots and a number of gathered fruits. Messrs. **Rivers** also contributed excellent Lemons (Silver-gilt Knightian Medal).

Miss **Talbot**, Margam Park, Glamorganshire, showed home-grown Oranges, staging some fine examples of the varieties Embiguo, Exquisite, Dulcissima, and St. Michael (Silver-gilt Knightian Medal).

The Duke of **Rutland**, Belvoir Castle, Grantham (gr., Mr. Divers), showed a meritorious collection of Apples and Pears, and some well-preserved bunches of Black Alicante Grapes (Silver-gilt Knightian Medal).

Exhibits of Apples were also shown by Messrs. **Bunyard & Co.**, Maidstone, who staged sixty dishes (Silver-gilt Knightian Medal); by Messrs. **Cannell & Sons**, Swanley, who had forty dishes of excellent fruits (Silver-gilt Banksian Medal), and by Messrs. **Cheal & Sons**, Crawley, who contributed twenty dishes of Apples in season (Silver Knightian Medal).

UITENHAGE HORTICULTURAL SOCIETY, CAPE COLONY.

February 15.—This South African Society held its thirteenth annual show on the above date, as owing to the lateness of the season the show had been postponed from Feb. 1. The entries were nearly 300 more than in the previous year, and amounted to 700. The exhibits of fruits were of very good quality. Flowers were not so good, owing to heavy winds and showers having prevailed during the two days previous to the show. The preserved and bottled fruit was excellent.

Three groups of plants arranged for producing effect were very pretty. Messrs. **Smith Bros.** easily won the 1st prize, and Mr. H. **Fairy** was 2nd. In the class for specimen plants, Messrs. **Smith Bros.** showed some very fine Palms, and won the 1st prize for a plant of Cocos Yatai, which was compact in habit with silvery-coloured leaves. Six specimen Codiæums (Crotons) exhibited by the same firm were well coloured and well grown, though of rather small size. Mr. **Magenis** exhibited a very nice collection of Japanese Plums, but this season generally has not been a favourable one for Plums. The Grape season has been a good one, and some big bunches were shown. Mrs. V. **Roberts** won 1st prize for the largest bunch grown in the district. Messrs. **Smith Bros.** had a very good collection of eighteen varieties of Grapes, for which they were awarded 1st prize; Lady Downe's Seedling was very good, the berries large, and bearing plenty of bloom on them.

The Society has been affiliated with the Royal Horticultural Society. Monthly meetings are held, at which points are awarded to the exhibits, also Awards of Merit and First-class Certificates. The winner of the greatest number of points during the year will receive a "Cup." *Interested.*

LINNEAN.

March 16.—Professor W. A. Herdman, F.R.S., President, in the Chair.

The President announced that the Council had appointed a Committee to consider the question of zoological nomenclature discussed at the last meeting; also, in view of the interest displayed at a previous meeting on the subject of Œcology, a discussion had been arranged for May 4 next, to be opened by Mr. A. G. Tansley.

Mrs. D. H. Scott, F.L.S., exhibited photographs of plants taken by the kammatograph, showing the natural movements of the plants accelerated so as to be readily followed by the eye.

The plates shown were:—1 and 2. Sparmannia africana, showing the opening of the flower-buds, the movements of the stamens, and the closing of the flowers at night. 3. Sensitive plant, Mimosa sensitiva, showing the movements of the leaves on stimulation. 4. Fuchsia, showing the opening of two buds into flower, during sixteen days, the bursting of the stamens, and the growth of the style between them. 5. Maurandia, showing the circumnutation of the stem and two young petioles twining round the stick. 6. Crocus: development of a bud and the opening and closing movements of the flower. 7. Clivia; opening of the flower-buds. 8. Hippeastrum: growth of stamens and style and development of the stigma. 9. A humble-bee fertilising a Scabious flower.

Mr. Rupert Vallentin, F.L.S., showed a series of thirty lantern-slides, from photographs taken by himself, of bird-life in the Falkland Islands.

Dr. Otto Stapf, F.L.S., presented a paper entitled "Contributions to the Flora of Liberia," being descriptions of three new genera and fifty-six new species, in a collection of about 260 species, collected by Mr. Alexander Whyte in the neighbourhood of Monrovia, in three different localities. The flora shows a specific likeness to that of Sierra Leone, and the new genera are not endemic:—Atroxima, a genus of Polygalaceæ, with three species; Urobotrya, Olacaceæ, also with three species; and Afrodaphne, Lauraceæ, with seventeen species, two being new to science, the others transferred from Beilschmiedia and Cryptocarya. The characters of these genera were illustrated by drawings, and described by the author.

BRITISH GARDENERS' ASSOCIATION.

March 24.—There was a large attendance of members of the Kingston Gardeners' Society and others at the "B.G.A." meeting promoted by the Society, and held at the Fife Hall, Kingston, on the above date, Mr. E. H. Jenkins presiding.

In the course of his address Mr. W. Watson, the secretary of the Association, said that the need for a gardeners' association was universally admitted, and that the lines upon which it was proposed that the "B.G.A." should be worked appeared to be generally approved. Why, then, was there not already an active and powerful Association working in the interest of the gardener, as there was now, he believed, for every other craftsman, with success? It was due to faint-heartedness, and to a far too general disposition to let the other fellow take the initiative and do the work. He reminded the audience that whilst it was impossible for the members of the Committee to themselves bring about reform, he was certain that it lay within the power of gardeners as a body to do so. Although the response to the Committee's appeal for members and for money could not be called great, it had been enough to ensure the launching of the Association upon the projected lines, and the interest in and support given to the Association was steadily increasing. He appealed to those present to form a district branch of the Association.

Mr. Jenkins and Mr. A. Dean having spoken in praise of the objects of the "B.G.A.," and in favour of the formation of a Kingston branch, Mr. J. T. Blencoe (secretary of the Kingston Society) expressed himself aware of the need for a Gardeners' Association, but, on the grounds that gardening was a luxury, he was sceptical about the possibility of gardeners obtaining fairer treatment. The proposal to form a local branch was discussed, and finally it was decided that a second meeting should be held to further consider the matter.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending March 25, 1905.

1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
	At 9 A.M.		Day.	Night.							
March 19 to March 25.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
Means	45	43	55	38	29	46	46	45	Tot 0·23	5	35

THE WEATHER IN WEST HERTS.

Three Weeks of Warm Weather.—The present spell of warm weather has now lasted over three weeks, during which period there has been no unseasonably cold day, and but one cold night. The warmest day occurred during the past week, when the temperature in the thermometer-screen rose to 60°. This, although by no means an exceptionally high reading for the season, is the highest as yet recorded this year. The ground, as might be expected after such a long continuance of genial weather, is unusually warm, being 3° warmer than is seasonable both at 1 and 2 feet deep. Rain fell on four days during the past week, but the total measurement amounted to less than a quarter of an inch. These light falls have not affected the percolation gauges, through neither of which has there passed any measurable quantity of rain-water for several days. The sun shone on an average for 4¾ hours a day, or for about an hour a day longer than is usual. The winds have been variable in direction and of very moderate strength. The mean amount of moisture in the air at 3 P.M. was about 2 per cent in excess of a seasonable quantity. *E. M., Berkhamsted, March* 28, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 200.]

MARKETS.

COVENT GARDEN, March 29.

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6-0 9	Galax leaves (American), per dozen bunches.	2 6 —
— — medium, each ...	0 4-0 6	Ivy-leaves, bronze	1 6-2 0
— — short sprays per bunch...	1 0-2 6	— long trails, per bundle ...	1 0-2 0
— Sprengeri ...	0 9-1 6	— short green, per dozen bunches ...	1 0-1 6
— tenuissimus..	0 6-0 9	Myrtle, doz. bun.	3 0-4 0
Adiantum cuneatum, doz. bun.	6 0-9 0	Smilax, p. dozen trails	4 0-6 0
Croton leaves, doz.	1 0 1 6	Hardy foliage (various), per dozen bunches	3 0-4 0
Cycas leaves, each	1 0-1 6		
Fern, English, p. dozen bunches	3 0-4 0		

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, p. doz. bunches, pink	2 0-3 0	Marguerites, per doz. bunches.	2 0-3 0
— fulgens ...	2 0-3 0	Mimosa (Acacia), per bunch ...	1 0-1 6
Carnations, per doz. bunches.	9 0-12 0	Narcissus, per basket... ...	4 0-8 0
Fern, French (Asplenium adiantum nigrum), p. doz. bunches ...	6 0 —	Ranunculus, per doz. bunches.	6 0-9 0
Freesias, dz. bun.	2 0-4 0	Violets, blue, per doz. bunches.	0 9 1 6
Lilac, per bunch.	2 6-3 6	— Parma, per large bunch...	1 6-2 6

Plants in Pots, &c.: Average Wholesale Prices

	s. d. s. d.		s. d. s. d.
Acacia armata, per doz.... ...	12 0-18 0	Daffodils, various, per dozen ...	4 0-6 0
Aralia Sieboldi, doz.	4 0-6 0	Deutzia gracilis, per dozen ...	6 0-8 0
Araucaria excelsa, per dozen ...	18 0-30 0	Ericas, per doz....	15 0-24 0
Aspidistras, green, per doz. ...	18 0-24 0	Euonymus, dozen	4 0-9 0
— variegated, per doz. ...	30 0-42 0	Ferns, in thumbs, per 100... ...	8 0-12 0
Azalea indica, p. doz.	15 0-30 0	— in 48's, p. doz.	4 0-10 0
— mollis, p. doz.	24 0-42 0	— in 32's, p. doz.	9 0-18 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	Ficus elastica, p. doz.	9 0-12 0
— Sprengeri, doz.	8 0-12 0	— repens, per doz.	6 0-9 0
— tenuissimus per doz. ...	8 0-10 0	Genistas, per doz.	5 0-8 0
Begonia Gloire de Lorraine, doz.	12 0-18 0	Hydrangea, Thos. Hogg, per. doz.	9 0-18 0
Boronia megastigma, p. doz.	12 0-24 0	Hortensia, p. doz.	12 0 —
— heterophylla.	18 0-24 0	Hyacinths (3 in a pot), per doz. ...	6 0-9 0
Calla æthiopica, per doz. ...	5 0-6 0	Kentia Belmoreana, per doz...	12 0-18 0
Cinerarias, per dozen	5 0-8 0	— Fosteriana, p. doz.	12 0-21 0
Crotons, per doz.	12 0-30 0	Latania borbonica, per doz. ...	9 0-15 0
Cocos Weddelliana, per doz. ...	18 0-30 0	Marguerites, doz.	6 0-9 0
Cyclamen persicum, per doz.	7 0-15 0	Mignonette, per dozen	6 0-9 0
Cyperus alternifolius, p. doz.	3 0-5 0	Primula sinensis, per doz. ...	4 0-6 0
Cyperus laxus, dz.	3 0-4 0	— obconica, per dozen ...	3 0-5 0
Dracænas, p. doz.	9 0-24 0	Spiræa japonica, per doz. ...	6 0-9 0
		Tulips, in boxes, each	1 6-2 6

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen ...	3 0-3 6	Leeks, doz. bndls.	1 6-2 0
— Jerusalem, p. sieve	1 0 —	Lettuces, Cabbage, per dozen ...	1 0-1 3
Asparagus, bunch	6 0-7 6	Mushrooms (house) per lb.... ...	0 9-1 0
— Giant	20 0-28 0	Onions, pickling, per sieve ...	5 0-6 0
— Paris Green...	5 9 —	— Egyptian, cwt.	14 0-14 6
— Spanish, bunch	1 9 —	— English, cwt.	17 0 —
— Sprue, p. doz.	10 0-12 0	— Green, p. doz.	3 0 —
Beans, dwf., p. lb.	1 0-1 3	— Valencia, case	12 0-14 6
— Madeira, per basket, broad	1 6 —	Parsley, 12 bunch.	1 6-2 0
Beetroot, bushel	1 6 —	Parsnips, per bag	3 0-3 6
Broccoli, Sprouting, bag	1 6-2 0	Peas, French, pkt.	0 7 —
Brussels-Sprouts, sieve	0 6-1 0	— Frame, per lb.	2 6-3 0
Cabbages, p. bag	1 6 —	— Flats	8 6-10 0
— per dozen ...	0 6-1 0	Potatos, per ton	50 0-90 0
Carrots, 12 bunch.	2 0 —	— Frame, lb. ...	0 4½-0 6
— bag	2 6-3 6	— Teneriffe, cwt.	12 0-15 0
Cauliflowers, doz.	0 9-1 6	Radishes, 12 bnch.	0 6-1 0
— Cherbourg dz.	0 9 —	Rhubarb, York, dz.	0 6-0 8
Celery, per dozen bunches... ...	6 0-8 0	Salad, small punnets, per doz	0 9 —
Cress, doz. pun.	0 9 —	Savoys, per tally	3 0-4 0
Cucumbers, doz.	1 6-3 0	Seakale, per doz.	7 0-12 0
Curled Kale, bush.	1 0 —	Shallots, p. sieve	3 0 —
Endive, per doz.	2 0-2 6	Spinach, bush. ..	2 0-2 6
Garlic, per lb. ...	0 3-0 4	Tomatos, bundle	8 0-12 0
Greens, bushel ...	1 0-1 6	— English, p. lb.	1 0-1 6
Horseradish, foreign, p. bunch	0 8-0 9	Turnips per doz.	1 6-2 0
Mint, per dozen...	3 0-5 0	— per bag ...	1 6-2 0
		Turnip-tops, bag	0 9 1 6
		Watercress, per doz. bunches.	0 6 0 7

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Azalea Fielderi, per doz. bun...	2 6-3 0	Lilium longiflorum ...	3 0-4 0
— mollis, per dz. bunches ...	9 0-12 0	— tigrinum ...	2 0-2 6
Calla æthiopica, per doz. blooms	2 0-3 0	Lily of the Valley, per dozen bunches ...	6 0-10 0
Camellias, per dz. blooms	1 6-2 0	Marguerites, per doz. bunches, white	3 0-4 0
Carnations, p. dz. blooms, best American vars.	2 6-5 0	— yellow... ...	3 0-5 0
— smaller do. ...	1 0-2 0	Narcissus, p. doz. bunches, gloriosus	1 6-2 6
— Malmaisons ...	10 0-12 0	— paper-white	1 6-2 6
Cattleya, per doz. blooms	10 0-12 0	— Pheasant's Eye	2 0-3 0
Cypripedium insigne, 12 blooms	2 6-3.6	— Jonquil ...	2 0-3 0
Daffodils, per dz. bunch., single yellow ...	2 0-4 0	Odontoglossum crispum, pr. dz. blooms	2 0-3 0
— double ...	2 0-3 0	Pelargoniums, p. doz. bnchs.	
— Emperor ...	2 0-4 0	— (Zonal) double scarlet ...	3 0-6 0
— Golden Spur	3 0-5 0	— salmon & pink	4 0-6 0
— Henry Irving	3 0-4 0	Roses, per dozen blooms, Niphetos, ...	2 0-3 0
— bicolor... ...	2 0-4 0	— Bridesmaid ...	3 0-5 0
— Sir Watkin ...	3 0-5 0	— Kaiserin A. Victoria ...	5 0-6 0
Dendrobium nobile, doz. blooms	1 6-2 0	— General Jacqueminot ...	1 6-2 6
— Wardianum ...	1 6-2 6	— C. Mermet ...	3 0-4 0
Eucharis grandiflora, per dozen blooms	2 0-3 0	— Liberty ...	3 0-5 0
Euphorbia jacquiniæflora, bunch	1 6-2 6	— Mrs. J. Laing.	3 0-5 0
Gardenias, per dz. blooms	1 0 2 0	— Sunrise ...	1 6-2 6
Iris Germanica, p. bunch	1 0 —	Tuberoses, per dozen blooms	0 3-0 6
Lilac (English forced), per bun.	2 0-3 0	Tulips, doz. bun.	6 0-12 0
Lilium auratum, per bunch ...	2 6-3 0	— special double varieties ...	18 0-24 0
— lancifolium, rubrum and album... ...	2 6-3 6	Violets, blue, English, per dz. bunches... ...	1 0-4 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, bushel ...	3 0-8 0	Grape-Fruit, per case	10 0-15 0
— English, per sieve or half bushel ...	1 6-3 0	Grapes, Gros Colmar, per lb.	2 6-4 0
— — per barrel.	12 0-21 0	— Alicante, p lb.	2 0-2 6
— Victorian per case ...	8 0-18 0	— Almeria, doz. lb.	5 0-9 0
Bananas, bunch .	7 0-12 0	Lemons, per case	8 0-18 0
— loose, dozen	1 0-1 6	Oranges, per case	8 0-40 0
Cobnuts per lb. .	0 6½ —	— Blood	8 0-15 0
Cranberries, per box	13 0 —	— Jaffa, per box	12 0-15 0
Custard-Apples, per dozen ...	5 0-9 0	Pines, each ...	2 0-4 0
Figs, per dozen ...	15 0-24 0	Strawberries, A., per lb.	5 0-8 0
		— — B., per lb...	2 0-4 0

POTATOS.

Dunbars, 80*s.* to 90*s.*; various, home-grown, 50*s.* to 70*s.* per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

REMARKS.—Vegetables in crates have arrived from Bermuda. These comprise Carrots, Beetroot, and Cos Lettuce. These Lettuces are very good and of fresh appearance. The Beet are of small size, round in shape, but will not be likely to prove a commercial success. Cape Plums per case are 4*s.* to 7*s.*; Nectarines, 6*s.* to 8*s.*; Pears, 5*s.* to 10*s.*; Grapes, 5*s.* to 12*s.*; F. Apples, cases containing about 60 lb., are 6*s.* to 9*s.* 6*d.* Apples from Victoria represent numerous varieties.

COVENT GARDEN FLOWER MARKET.

Large supplies of cut flowers and flowering plants are now arriving. Trade is fairly good, but prices are very uncertain, and generally favour the buyers. Among plants, spring-flowering Ericas are very good; I have never seen better plants of E. Willmoreana of the ordinary type; in addition there is a variety with larger flowers named grandiflora; the white variety is also good. Plants of E. candidissima are well flowered, also E. coccinea minor and E. Cavendishi; E. persoluta alba is also worthy of note. Fair prices are maintained. Indian Azaleas continue good, and sell fairly well. Boronia heterophylla and B megastigma are still seen in well-flowered plants. Supplies of Cyclamen are now on the wane, some growers have finished sending, but the present supply is equal to all demands, and prices are low. Cinerarias are plentiful and good. Hydrangeas are now coming from several growers—the variety Thos. Hogg is most plentiful; good coloured pink (Hortensia) are also seen. Roses in pots are now obtainable; of these the dwarf crimson variety Madame N. Levavasseur is of very good quality, making 18*s.* per dozen. Mignonette is very good; Machet is the favourite variety. Zonal Pelargoniums are now more plentiful. Spiræas are abundant, but vary much in quality and in prices. Genistas are arriving from a number of growers; the mild weather is developing these plants too fast. Marguerites also continue plentiful. Supplies of Hyacinths hold out well. Daffodils in pots are also plentiful. Intermediate Stocks are good, but only the white variety is seen; the crimson variety is generally in the market a fortnight later than the white. Bedding plants are already coming in. Zonal Pelargoniums in 60's with one truss of flowers open on each plant sell well. Marguerites, Fuchsias, Coleus, &c., are also seen. Quantities of various subjects in store boxes are seen:—Stocks, Lobelia, Pyrethrum, Fuchsias, Marguerites, dwarf Marigolds, seedling Tropæolums. Sweet Peas are to be had in small pots. Hardy flower roots in variety and Pansies sell readily.

CUT FLOWERS.

Excessive supplies make it difficult to give definite prices. Roses continue over-plentiful, but prices are not much lower. Carnations are also very abundant: some of the Malmaisons seen are not of the first quality, but the best sell well. Liliums are more plentiful; auratums are good, and the varieties platyphyllum and virginale are extra fine; these make about 4*s.* per bunch. Daffodils and various sorts of Narcissus from the Scilly Islands are fairly good, but the market is glutted with them; best English Daffodils make up to 5*s.* per dozen bunches. Supplies of Gardenias continue to exceed all demands. Eucharis are not plentiful. Double varieties of Tulips are very fine, and there are now some good Darwin varieties. French Ranunculus in various colours are now plentiful and cheap. Anemones include the double pink and double scarlet fulgens and coronaria in variety. Violets, both English and French, are very plentiful; good Parmas can be had at low prices. Lily of the Valley continues over-abundant. Among cut foliage, Asparagus, Smilax, and all ordinary foliage is well supplied; Croton leaves are not so plentiful. *A. H., Covent Garden, March* 29.

ENQUIRIES.

HOT-WATER PIPES.—Will some reader tell me how I can clean hot-water pipes inside and out What is the best way to disconnect old pipes? *R. P.*

ROSES.—Has any reader grown the varieties Madame Cochet and Kaiserinn Augusta Victoria in solid beds in the same house as the varieties Liberty, Bride, Bridesmaid, and found them to succeed together? *H. Y.*

ANSWERS TO CORRESPONDENTS.

ADIANTUM FRONDS IMMATURE: *J. H. S.* The fronds have in all probability been grown in too much heat, and the continued lack of sufficient light prevents their maturing. Those in the vinery obtain more air, and are perfect.

BLACK CURRANTS AND GOOSEBERRIES: *J. B.* You can only protect the buds from birds by covering the bushes with fish-netting, or by enclosing them in a permanently protected garden enclosed and covered with wire-netting. Why have you sent three stamps?

CANNAS: *J. F.* There is no trace of disease that can be attributed to either fungi or insects. The blackening is due to too slow a process of drying after being lifted.

CARNATION FOLIAGE: *J. A. R.* The blisters on the leaves of Souvenir de la Malmaison Carnation are due to the punctures of mites when the leaves are young. The XL-All or other vaporiser will prevent this if used in time.

COLONIAL COMPANIES: *A Constant Reader.* You should consult the advertising pages of such papers as *The Tropical Agriculturist*, published by A. M. & J. Ferguson, *Ceylon Observer* Office, Colombo. The following addresses may prove useful to you:—Secretary, Ceylon Planters' Association, Kandy, Ceylon; Messrs. J. P. William & Brothers, tropical seed merchants, Henaratgoda, Ceylon; Yataderiya Tea Co. of Ceylon, Ltd.; The Putupaula Tea Estate Co., Ltd.; The Talgaswela Tea Co. of Ceylon, Ltd.; Portmore Tea Co. of Ceylon, Ltd.

CROPPING OF VINES: *C. W. S.* A great deal depends on the age and condition of the Vines and their roots, also upon the present state of the border. If the Vines are in a healthy condition, and assuming that the borders are mulched after thinning has been done, and that occasional sprinklings of Thompson's Vine-manure are applied, also that at other times the roots are afforded diluted liquid-manure or guano-water of the strength of 2 oz. of guano to 1 gallon of water, then 1½ lb. of fruit may be permitted to each foot-run of rod if the Vine has more than one rod, or 2 lb. to healthy single rods. In your case these weights should never be exceeded, as it is better to undercrop than overcrop the Vines, badly-coloured Grapes being never more than second-rate in quality. If the Vines make plenty of healthy foliage, and continue to produce lateral growths during the stoning period, this will prove that the Vines are not overcropped.

CUCUMBERS: *F. W.* You are quite right in supposing the injury to be due to forced growth. Modify the conditions very gradually, and the symptoms may cease.

Deciduous Shrubs for the Midlands: *Yew Tree.* Of deciduous species Forsythia suspensa is one of the most welcome of early-flowering shrubs, especially if a background or a groundwork of evergreens can be provided. Its lovely yellow, bell-shaped flowers appear on long, graceful, leafless shoots in March. Exochorda grandiflora (Pearl Bush) is of upright habit, free in growth, and delightful in blossom; flowers single, white, much after the fashion of a single Rose. The flowers of Pyrus (Cydonia) japonica cardinalis are larger and brighter in colour than those of the type. Berberis Thunbergi is a dainty shrub with tiny reddish-yellow drooping flowers in spring, and the plants are conspicuous in autumn, when its small green leaves assume many shades of orange, red, and yellow. Hypericum Moserianum, a low-growing hybrid St. John's Wort is remarkable for its clear, Buttercup-yellow flowers borne profusely in summer and autumn. The common flowering Currant (Ribes sanguineum) and its improved form atro-sanguineum are of easy culture, and succeed in nearly all positions. There is a host of really good things amongst the Spiræas. The first species to flower out-of-doors is S. Thunbergi, which in mild seasons bears its small white delicately-scented flowers towards the end of February. This is followed by S. arguta, one of the best single white forms, and S. prunifolia fl. pl., also white. Other good sorts are, S. Bumalda var. Anthony Waterer, S. Douglasi, Lindleyana, and media (confusa). Hydrangea paniculata grandiflora is perfectly hardy, and if cut back to within one or two eyes of the old wood before growth commences in spring will bloom freely; its flowers are white, passing to a reddish hue, borne in terminal panicles about 10 inches in length, and remain attractive for about six weeks in autumn. Of small-growing Plums, Prunus triloba is pre-eminent; in early spring its shoots are wreathed with light pink, double flowers rather bigger than a shilling; obtain plants upon their own roots in preference to "worked" plants. Prunus nanus is a lovely dwarf species with rose-coloured flowers in February, and P. japonica (sinensis) with double flowers is prolific in blossom. Several mock Oranges can be recommended, especially Philadelphus Gordonianus, whose large white flowers appear in July; the trees require plenty of room in which to grow. The Snowball tree (Viburnum Opulus sterile) and the Japanese Gueldres Rose (V. plicatum) merit attention, and if planted in a sunny position would render a good account of themselves. The Bush Honeysuckles, Weigelas, or Diervillas as they are now called, blossom freely in your locality; good varieties are Abel Carrière (rose-carmine), candida (white), and Eva Rathke (dark purple, late). Rhododendrons (Azaleas) of the mollis and ponticum sections should be included, as the range of flower-colour is extensive and particularly rich. Lilacs are good, those here mentioned representing a few of the best varieties:—Marie Legrange (white), Souvenir de Louis Späth (dark purple), all single-flowered; Madame Lemoine (white), Michael Buchner (pale lilac), La Tour d'Auvergne (mauve shaded rose), double-flowered. For planting near the edge of the pond, no berry-bearing shrub of similar growth is so effective as Hippophae rhamnoides (Sea Buckthorn); but the two sexes should be planted together; the orange-coloured berries remain on the branches throughout the winter; a group of half-a-dozen plants would be ample. The above is a selection (not a collection) of shrubs; but if a few small-growing flowering trees are needed, all those mentioned below are thoroughly hardy and very beautiful:—Almonds, Peaches, Amelanchier canadensis (Snowy mespilus), the double scarlet and single pink Thorns, Cotoneaster frigida and C. affinis, both very handsome during autumn, when laden with clusters of showy berries, a remark that applies to the Mountain Ash, one of the most ornamental of berry-bearing trees in the Midland Counties. The common Laburnum is very effective in April, while the double-flowered white Cherry, Prunus avium, fl. pl., P. pseudocerasus Wateri, Pyrus Scheideckeri, P. floribunda, and P. f. flore-pleno (P. Parkmanni) wreathe their branches with flowers in the months of April and May.

Emigration to Colonies: *G. W. R.* We can only answer your question in very general terms, because in the matter of emigration, as in most others of a similar nature, so much depends upon the capacity of the individual to adapt himself to whatever circumstances may arise. It is a fact however, that of the emigrants to Canada or New Zealand, those are likely to succeed best who have had some training in this country in the work of gardening or farming. A man, if he possesses youth and health, coupled with indomitable perseverance and fondness for work, would be likely to find greater scope for advancement in either of the colonies mentioned than is afforded in this thickly populated island. Before selecting the colony, it would be well to write to the Agent-General for each, and he will send you particulars of the demand for labour existing in the colony he represents.

Freesias: *Verax.* We are not sure that we fully understand what is meant by your question. Freesias being Cape plants, we suppose all newly-introduced stock is obtained from that colony. But perhaps you wish to discriminate between corms actually brought from the Cape and corms that have grown in this country. In that event we should choose corms freshly imported, as they would be likely to possess greater vigour than those which originated during pot culture in England.

Hippeastrums: *Amaryllis.* The temperature you mention will be suitable if you regard it as the maximum. When the bulbs are approaching the completion of growth for the season afford rather less water to the roots, and let the light and sunshine have access to them, that the bulbs will become perfected or "ripened," as it is sometimes called.

Insect: *C. Garratt.* The common white Podurus, Lipura sp. It belongs to the family of "Springtails," but unlike its congeners has no power of leaping. They are often abundant in rich composts, and seem to thrive and multiply among the roots of plants cultivated under glass, but are not generally destructive. Bisulphide of carbon [caution] will destroy them, but we doubt if this agent could be applied to such tender plants as the young Nicotiana.

Latin Names: *J. M.* You will find much of the information required on reference to the Supplement issued with the first edition of Nicholson's *Dictionary of Gardening*.

Legacy: *Cambrian.* If your late employer left legacies in his will to all his domestic servants, and the executors have already paid such legacy to the coachman, then you, as head gardener, are also entitled to benefit under the will. We do not think it fair that the gardener should be regarded at one time as a domestic servant and as something quite different at another time, in order to deprive him of the privileges "menial" servants sometimes enjoy. You should consult a solicitor.

Lily of the Valley Crowns: *W. M.* You will not require to use manure in the forcing of the crowns into flower, and the soil should be of a very light nature, consisting largely of leaf-mould. When the plants are growing in the open beds good cultivation should be afforded in order that the crowns may become sufficiently strong and developed to produce good flowers.

Malay Orchids: *J. H. B.* To take Orchids from England to propagate in the Malay district with a view to returning them at a profit would result in failure. Indigenous Orchids cultivated there would not be profitable, for, among other reasons, cultivated plants suffer more when travelling than freshly-collected specimens from natural habitats. If you export any to England, send the wild specimens.

Names of Fruits: *W. C.* 1, Lord Lennox; 2, Beauty of Kent; 3, French Crab; 4, Flower of Herts; 5, Melon; 6, Castle Major.—*W. Lynos.* 1 & 4, London Pippin; 7 & 2, Bachelor's Glory; 3, Minchull Crab; 5, Tower of Glamis; 6, Prince Albert; 8, Forge.—*A. S. R.* Ross Nonpareil.

Names of Plants: *W. R. C.* A variegated-leaved form of Lamium purpureum, the red Deadnettle.—*R. H. S.* Cosmos sulphureus.—*T. D., Alton.* 1, Arpophyllum giganteum; 2, Dendrobium chrysotoxum (the form of the pseudo-bulb makes no difference); 3 and 4, Cœlogyne lactea.—*A. Y. L.* Dendrobium tetragonum.—*A. B.* 1, Adiantum caudatum; 2, Polypodium vulgare cambricum; 3, Oncidium altissimum; 4, Eria bicolor; 5, Phaius grandifolius; 6, Oncidium cheirophorum.—*M. A. W.* 1, Dracæna ferrea; 2, D. pulcherrima; 3, D. terminalis; 4, D. marginata; 5, D. intermedia; 6, D. congesta.—*J. B., York.* 1, Maranta Massangeana; 2, M. Makoyana; 3, Maranta, possibly a small leaf of Lindeni; 4, M. bella; 5, M. albo-lineata. — *F. B. B.* Forsythia suspensa. — *E. D.* Helleborus, possibly nigra. Send when in flower.—*G. B.* 1, Begonia fuchsioides (a garden form); 2, Cytisus racemosus var. Everestiana.—*W. P. L. & S.* Cornus mas.—*Constant Reader.* Why not number the specimens? The white flower is Jasminum hirsutum. The white leaf is Centaurea gymnocarpa. The small yellow flower, Cornus mas; the larger yellow flower is Forsythia suspensa.—*J. B.* Taxus adpressa, a variety of the common Yew.—*G. N.* 1, Acacia juniperina; 2, A. longissima; 3, A. dealbata; 4, A. longifolia; 5, Cupressus funebris (Retinospora stage).

Odontoglossum Leaves: *J. A. R.* The spotting of your Odontoglossum leaves is not due to lack of water at the root, but to a deposit of moisture on the leaves when the atmospheric temperature of the house is low. If ventilation be employed early in the morning it will check this.

Palms Damaged: *J. T.* The plants were grown under good conditions before being used for conservatory or indoor decoration, and the drier air to which they were removed failed to sustain the tissues formed under more favourable conditions.

Primulas: *W. B. Jeffreys.* The numbers were all disarranged through their not having been made sufficiently secure. All are forms of Primula denticulata, that of pale lilac colour, with pointed bronze-tipped leaves, is the type. Those with golden farina on stems and leaves represent P. cashmiriana, of which there are many varieties. P. Sieboldi is very distinct, with its running rhizome, and the growth appearing at its extremity; but P. Sieboldi in the open will not flower for a month yet.

Romneya Coulteri: *Correspondent.* This plant may be cut back to within a few inches of the ground-level early in spring. Some cultivators only remove the very old wood and shorten less severely the growths that remain; such specimens are apt to become of poor appearance, especially if the pruning is not done with more than ordinary care. The species likes to have its head in the sun and its roots in a moist medium during the growing season, but requires drier conditions in winter. It is a pretty flowering plant, but in most districts succeeds only indifferently.

The Pagoscope: *Various Enquirers.* The maker is M. Bernel-Bourette, Rue de Poitou 36, Paris, but we do not know the price.

Vines: *H. P.* The decayed part in one of the leaves is not due to disease, but has probably been caused by scorching or scalding. The tip of the growing shoot appears to be somewhat stunted, but the specimens are insufficient to prove the presence of a fungus. If the symptoms become worse you had better send us more specimens.

Violets Diseased: *J. L.* Your plants are affected with a fungus, Ascochyta violæ. Spray the plants with a solution of potassium sulphide—1 oz. to 3 gallons of water—every fortnight. When planting new beds select a fresh stock from a distance, and plant on a new site in the garden. See *Gardeners' Chronicle* for November 5, 1904, p. 328.

Communications Received.—Miss Webb (your letter has been forwarded).—F. W. M. -H. T.—A. E. B.—J. L. —J. J.—G. Cheltenham—Persica—S. B.—Puzzled—H. P.—E. T.—G. B.—A. H. P.—Lady M.—J. C. W. & Son —J. T.—H. J. C.—D. & Co.—W. C.—Geo. Monro—T. H.—W. H.—A. R. T.- H. M.—J. F. S.—Zola—E. G., Feltham —A. K.—G. W.—Press Association—F. J.—A. K.—H. J. E.—F. W. M.—G. A.—W. Hackett—J. S.—S. A.—Chloris—J. Mayne.

Photograph Received.—N. E., West Down.

THE
Gardeners' Chronicle

No. 954.—SATURDAY, April 8, 1905.

CONTENTS.

Acacia dealbata ... 218
Apiary, the 218
Books, notices of—
  Book of the Potato .. 212
  Publications received 217
Buitenzorg Botanic Garden... 217
Camellias 218
Cedar of Goa, the ... 219
Concert in aid of charities, a 217
Conifer trees, some large 218
Cucumber "spot" disease 219
Dahlia tubers, vitality of 218
Forests, wild and cultivated 221
Kew notes 217
Lachenalias, new hybrid 210
Liverpool Botanic Gardens 218, 224
Norwich, new public garden at 217
Obituary—
  Paul, William ... 216
Orchid notes and gleanings—
  Phalus tetragonus... 213
Potatos ... 217, 218, 219
Produce, imported ... 217
Roses, climbing ... 213
Seed sowing 212
Senecio auriculatissimus 213
Societies—
  Gardeners' Debating 222
  Horticultural Club . 221
  Manchester and North of England Orchid 221
  Royal Horticultural (Scientific Committee) 219
  Torquay District Gardeners'... ... 221
Spring flowers in the south-west 212
Trees, diseases of ... 217
Trees, the timber value of exotic ... 209
Varieties, alleged degeneracy of 219
Vines on outside walls 219
Week's work, the—
  Flower garden, the 215
  Fruits under glass... 215
  Hardy fruit garden 215
  Kitchen garden, the 214
  Orchid houses, the 214
  Plants under glass... 215

ILLUSTRATIONS.

Lachenalia aurea 211
Lachenalia pendula Aureliana 211
Lachenalias, two new hybrid 210
Paul, William, portrait of the late 216
Senecio auriculatissimus, a new species from British Central Africa 213
View of the spring rock-garden in Mr. Chamberlain's gardens at Highbury, Birmingham (Supplementary Illustration).

THE TIMBER VALUE OF
EXOTIC TREES.

It is seldom that I differ in opinion from such an excellent practical forester as Mr. A. C. Forbes, but the very weight of his opinion, which must be admitted by everyone who has read his recent work, induces me to offer a few remarks which I hope will not be looked upon as controversial, as I do not intend to argue the question further here.

Undoubtedly some of the exotic trees which have been recommended by various writers in your columns and elsewhere as having a possible timber-value in England are worthless even for ornament, and others require so much care and trouble in raising them, or are so particular about soil, situation, and climate, that they will only be useful as timber trees in exceptional cases. But the places in which the majority of the newer introductions, and many of the older ones, have been tried under proper conditions, by people having a sufficient knowledge of their requirements, are so few or altogether wanting that I cannot allow the necessity for further trial to stand condemned, even by Mr. Forbes.

Take, for instance, the common Acacia or Locust-tree, which eighty years ago was puffed in such an extravagant way by Cobbett, partly perhaps in his own interest, and partly because, in the prime of his life, Cobbett, with all his virtues, could not write temperately on any subject. Will Mr. Forbes or any other man name to me a native tree or any other tree which, on a warm soil in the South of England, will so quickly produce one of the most useful timbers in the world, if one knows how, when, and where to plant and use it?

Take, again, the Black Walnut. I have seen in Kent trees planted not more than one hundred years for which I should be happy to pay to-day twice as much as for any tree of its age, native or foreign, that I ever saw in England; and yet, such is the ignorance of the average British timber-merchant and consumer, that such a tree might be, and actually has been, sold at firewood price. Of course it is impossible at present to say what the timber of any tree will be worth in the future. It took nearly a century before the value of the Larch (itself an exotic tree), was fully recognised, and so long as the local trade is demoralised by unlimited foreign supplies of all the selected timber in the world, at a price little over the cost of felling and transport, and sometimes not even that, no home-grown timber whose qualities are not known will have a fair chance in the open market. But when Mr. Forbes condemns such a tree as Thuya gigantea as having only arboricultural interest, it only shows how little is known, even by good authorities, of the real value of many trees easy to grow in Great Britain. I do not blame him for not knowing what no man can know until he has studied exotic trees in their own countries as well as in England, remembering that I was myself advised by one of the most distinguished scientific foresters to plant for timber Pinus Banksiana, a tree which, however suitable for the barren Laurentian rocks of Upper Canada, is, even there, known as the "Scrub Pine," and which in England has never grown large enough to make a railway-sleeper, for which purpose alone it is, I believe, used in regions where nothing better can be got.

But there is another aspect of the case which Mr. Forbes seems to have forgotten, though his *British Estate Forestry* has shown that he realises it better perhaps than any previous author has done.

It is that as long as many parts of England continue to be a pleasure-ground for the rich, foreigners as well as Englishmen, it is not so much the actual timber-value on the land which gives it worth as the beauty, interest, and sporting possibilities of the woods and plantations on the estate. And I appeal to any experienced valuer whether, for instance, such places as Dropmore, Tortworth, or Ashampstead Common—I name three places as different in character as possible—would not be, either to let or to sell, of far greater value than a forest of German type on the same land, whilst they afford a constant source of pleasure to their owners and to many others. And considering what large sums are lost annually by the landowners of England by letting their valuable timber stand long after it is mature, and how much is spent on many other pursuits which do not afford so much interest or pleasure as the planting of exotic trees, I hope that his warnings will not be taken too strictly.

Believing, as I do, that we do not know nearly enough about trees, native or exotic, and acting on that belief, I am giving, with the help of Dr. Henry, the best of my knowledge, experience, time, and money to an attempt to describe and illustrate the trees of Great Britain in a manner worthy of so great a subject, in the hope that the knowledge we have both acquired in other countries as well as in Britain may be made useful to others. *H. J. Elwes, Colesborne.*

—— Before and since the recent great conversion from "Arboriculture" to "Sylviculture," a few outsiders have persistently confined the list of useful Conifers to the Douglas Fir, Japanese Larch, Corsican Fir, and one or two others yet on trial; but long as the Corsican has been in this country there are few successful plantations of it in England, and unless it be in some recent cases, I believe there are none at all in Scotland worth calling plantations. Most of the favourable opinions expressed by writers are borrowed from the experience of others. An owner of an estate in Scotland wrote to me not long since about planting the Corsican, and on my suggesting that he should see plantations of it in his neighbourhood, he replied that there were no Corsicans to be seen anywhere in one of the best wooded portions of Perthshire. The planting of the Corsican Pine has been a general failure because it has been carelessly effected at the wrong season, yet there is not an easier tree to plant, and I can show miles of it in proof in different soils and elevations.

As to the Japanese Larch and disease there is only one certified case, the Dumfriesshire twig sent to Kew. The Perthshire case, originally reported by the head forester, was subsequently found to have been based on an error. I was told this by the forester when I went to see the tree. The Cockle Park case, mentioned at p. 178, would be an amusing if unintentional confirmation of the disease-resisting powers of the Japanese variety, seeing the fungus had become common there without producing the blister, if it was not for the fact that the fungus cannot be established on the tree unless it takes root in the tissues, and when it does that the blister is inevitable and early. Something else has quite evidently been taken for the Peziza by your correspondent's informant.

It is not a case of waiting to see whether the Japanese Larch will become liable to the disease or not, because ever since the tree was introduced it has been subjected to the same conditions that produced and spread the disease on the common Larch, and in an aggravated degree too, namely, contagion. It has never been suggested by any competent authority that the common Larch gradually grew susceptible to the disease and then fell a prey. The blister appeared as soon as the fungus had time to travel from its original source to British plantations. It says a good deal for the Japanese variety that although hundreds of thousands, if not millions, of it have been planted, diseased examples are so hard to find, and some of these alleged specimens vanish when sought for.

Another quite unwarranted assumption is that the Japanese Larch at about twenty years of age may take it into its head suddenly to stop growing as fast as it certainly promised to do. Is there any record of forest trees playing such absurd tricks? The "boy is father to the man" in trees as well as in human beings. I have not Veitch's last edition of the *Manual of the Conifera* by me, but in it, if I remember rightly, some 40 or

50 feet has been added to the stature of the Japanese variety, which in the first edition was only 30 to 35 feet. Schwappach records a case in which the tree reached a height of 37 feet in nine years. At Stourhead, Dorset, a pure plantation of Japanese Larch was put out last November, the trees averaging over 4 feet, many being about 5½ feet, and these were one-year-old seedlings, 2 or 3 inches high, just two years before. Had they not been checked by the transplanting they would have averaged between 5 and 6 feet. One of the first plantations, if not the first, put out in England I planted near here, at a high elevation, on poor, thin soil, a few years ago, and the trees now run from about 14 to 18 feet, and there is not a speck of disease to be seen, although it has been long in the vicinity.

I may add that I do not neglect the common Larch, but always recommend a proportion of both to be planted as a precaution, and these in a mixed wood of other useful species. I can sell diseased common Larch at a good rent-paying price from 4½ inches quarter girth upwards, and considerably under forty years of age. There are, at the present moment about 10,000 cubic feet of diseased Larch poles lying at a station in Mid-Wales, all sold to one customer near Crewe, at the ordinary district price, which, so far as I know at present, must have amounted to about £65 per acre at forty years of age in land worth for agricultural purposes, 1*s.* 6*d.* per acre. *J. Simpson.*

—— In reference to "The Timber Value of Exotic Trees" (p. 177), by Mr. A. C. Forbes, would it not be much better for landlords, and also for national reasons, to grow timber that is used in quantity in this country? Timber imported from Europe has about three times as much value as home-grown timbers. Is it not very bad forestry to produce soft timber from trees that produce valuable timber if not so rapidly thinned out? I quite agree with Professor Schlich in his last book that the new forestry will lead us to make the same mistakes that Brown did, although Schlich does not say that in so many words. When we can produce timber in quantity from our native trees, then it will be time to turn to exotic trees as timber producers. *Alec. D. Berney, Carlisle.*

LACHENALIA HYBRIDS.

THE genus Lachenalia may be classed amongst those which exhibit comparatively little inherent tendency to variation, and as the number of species possessing bright colours, or which are attractive or showy from a florist's point of view, is small, Lachenalias have not received much attention from gardeners. Further, when intercrossed, the seedlings vary very slightly from the parents, so that it takes a considerable time to get well-marked varieties of merit. The fact that it takes three years to flower seedlings, even under good and careful cultivation, is another potent factor which deters hybridisers from taking this genus in hand.

The first authenticated hybrid was raised by the Rev. John Nelson, in or about 1878, a cross between Lachenalia aurea and L. tricolor luteola, and this is still one of the best hybrids for general cultivation. The same hybridiser also raised L. aureo-reflexa (Baker), also known as Aldborough Beauty, a very distinct plant, which when crossed with L. Nelsoni produced L. Wm. Watson. About ten years later some excellent varieties were raised by the Rev. Theodore H. Marsh, including Rector of Cawston, Cawston Gem, Garnet, &c.; and in recent years additional crosses have been offered by Messrs. Dammann & Co., Naples.

The varieties here illustrated (fig. 91) were obtained by me at the Royal Botanic Gardens, Glasnevin. I commenced raising seedling Lachenalias in 1885, and each year since that date I have raised about half-a-dozen crosses, a very small proportion

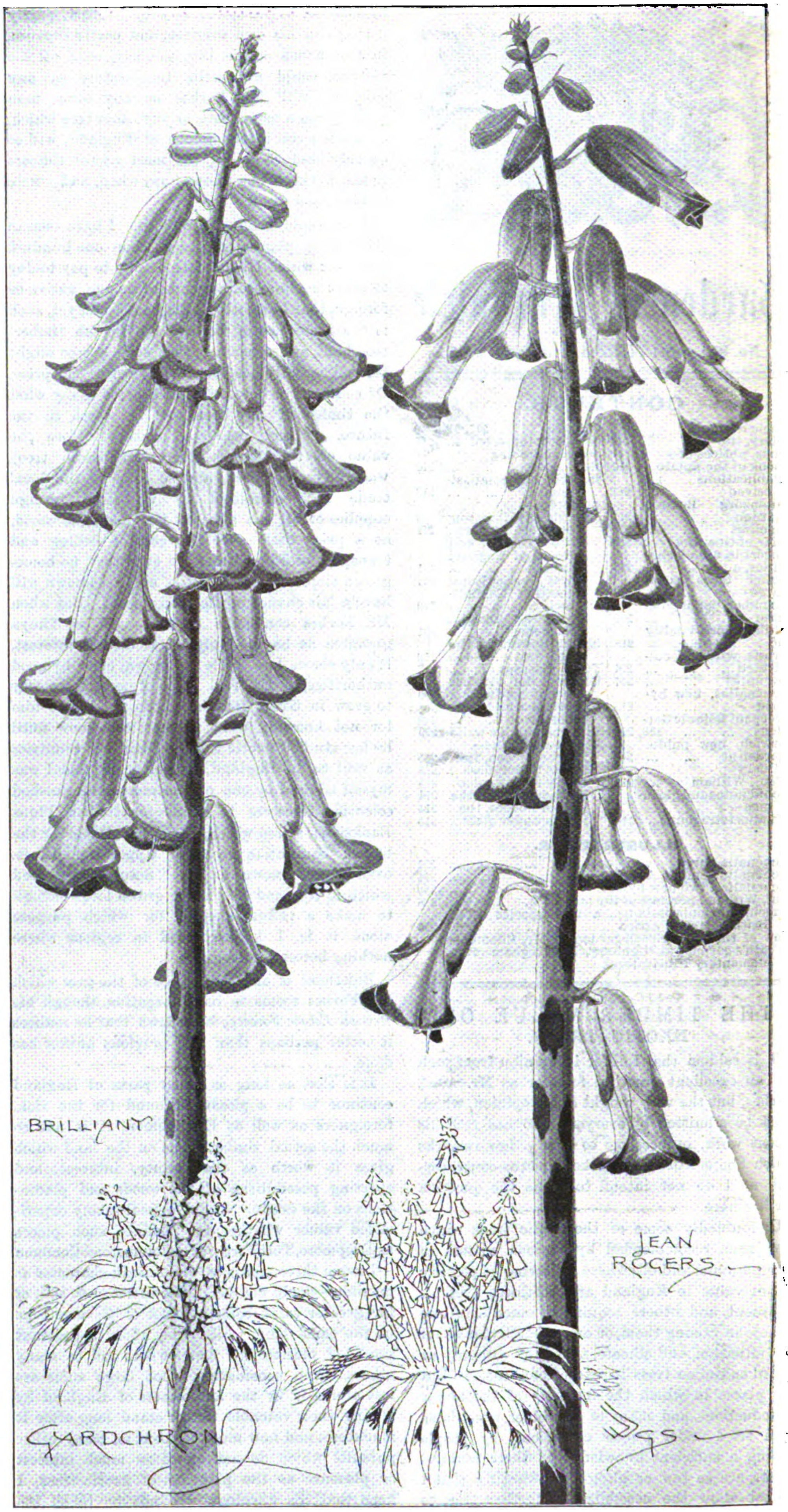


FIG. 91.—LACHENALIAS × "BRILLIANT" AND "JEAN ROGERS,"
Which obtained Awards of Merit at a recent meeting of the Royal Horticultural Society.

of which have been worth retaining and naming as showing some distinct advance on their predecessors. At first the parents were limited to L. tricolor and varieties, the best of these being L. t. luteola and L. t. quadricolor maculata, generally known as L. superba, L. aurea, L. Nelsoni, L. Cami, and then the Cawston seedlings. Certain objects were constantly kept in view. I endeavoured to eliminate as far as possible the green tints predominant in the flowers of L. tricolor; to get a good clear yellow; to increase the amount of red in the flowers; to increase the size of the flowers, the strength of scape, and the number of flowers. Most of the parents were defective; the predominating colour in L. tricolor is green, and this green is most persistent, appearing through generations. L. t. quadricolor maculata, although with a much brighter flower than L. tricolor, has a weak, thin scape, the flowers being scattered far apart. L. aurea (fig. 93) is of a good colour, deep yellow, but has a small scape, and is a shy flowerer, so that in effecting crosses all these points had to be kept in view. The advent of L. aurea gigantea was a great help, and seedlings from this at once showed distinct advance. Crossed with the best of existing seedlings, the resultant progeny were better than any previously obtained, and their progress has been continued.

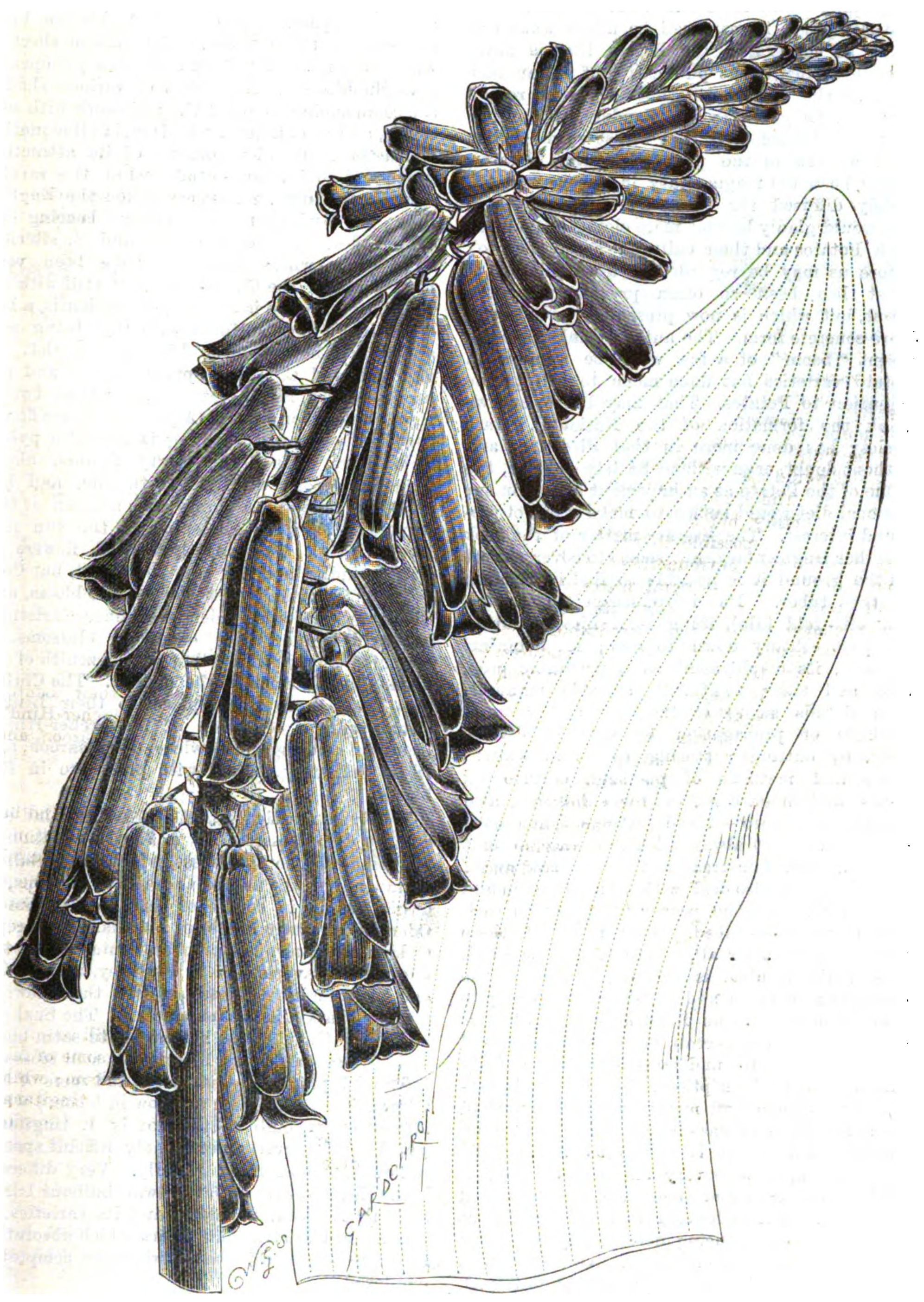


Fig. 92.—Lachenalia pendula Aureliana: colour of flowers crimson.

One of the characteristics of the newer varieties is the amount of bright red colour which has been got into the inflorescence, not into the flowers, but into the abortive buds which terminate the scape. These have increased both in number and in intensity of colour.

For many years I have endeavoured to get red colour from Lachenalia pendula (fig. 92) or from L. rubida, but hitherto not one seedling from these crossed with other distinct species has flowered. I have apparently had good seed, but either it has failed to germinate, or else the seedlings have shown no trace whatever of L. pendula or L. rubida, probably proving that the cross had not been effected. However, at the present moment some distinct seedlings give promise of better results.

A glance at the varieties illustrated (fig. 91) will demonstrate the advances made. These seedlings are free-flowering; the colours are bright and attractive, the scapes are strong and erect, the flowers distributed all round them and not hanging to one side, the number of flowers has increased from twelve to twenty, until they are from thirty to forty, the last-named being not an unusual number.

Seed should be sown as soon as ripe. It takes from three to four months to germinate, and if kept in a warm house the seedlings remain green and continue to grow for eighteen months, or for two seasons. After this Lachenalias require very little fire-heat; a cool, airy bright house suits them best, and they should be grown close to the light. It is advisable to repot and divide up the bulbs each year, doing this early in August. *F. W. Moore, Botanic Gardens, Glasnevin.*

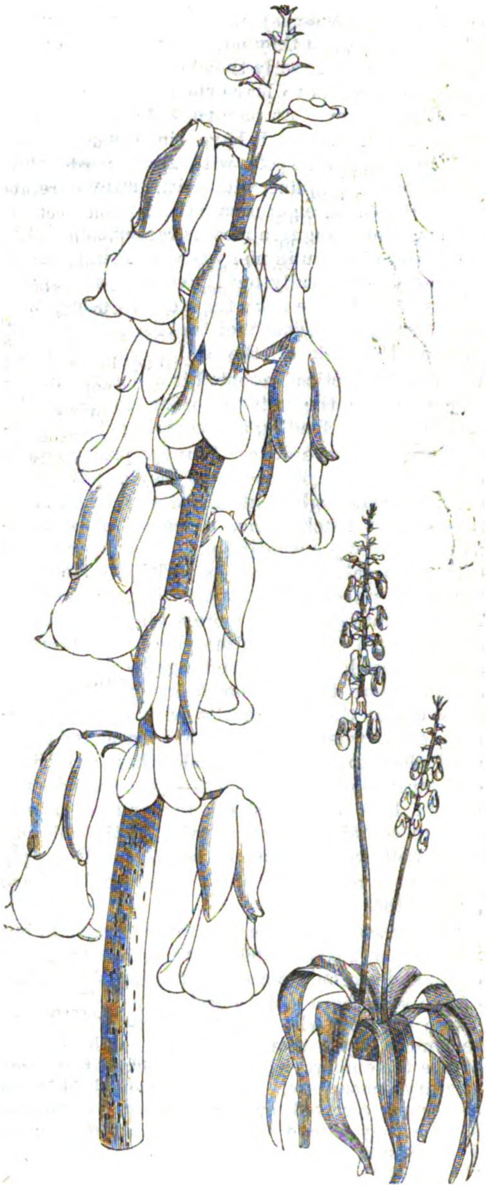


Fig. 93.—Lachenalia aurea: colour of flowers rich apricot or golden-yellow.

[In addition to the illustrations of the new hybrid Lachenalias raised by our valued correspondent Mr. Moore, we take this opportunity to reproduce figures of the species L. aurea, and of L. pendula var. Aureliana, which latter it is stated was found originally growing near to the summit of Mont Esterel, Alpes Maritimes, in the South of France in 1889, a most unlikely position, where, indeed, its presence could only have been accidental. It was shown by Mr. C. G. Van Tubergen, of Haarlem, at a meeting of the Royal Horticultural Society in London, on March 8, 1898. Ed.]

SEED SOWING.

Seeds in many instances, or rather the embryo plants within them, have such vitality that they will struggle into life under the most adverse conditions. But this is not true of all seeds, for many are rendered sterile by the least accident. In raising seedlings, although it is advisable to consider and to imitate natural conditions as far as possible, there are many instances in which these conditions can be improved upon. For instance almost all seeds with hard shells may with advantage be soaked in water before they are sown, provided the water is changed at least once every day. Some seeds (as those of the Acacias) will swell at irregular intervals, although they must be taken out of the water and sown directly they have swollen. It is injurious to seeds to leave them for too long a period in water. At one time I used to soak Cyclamen seed, but I have since found that surfacing the seed-pots with fresh sphagnum-moss chopped very fine, with a little sand added, is sufficient to ensure germination.

The use of sphagnum-moss is recommended for aiding germination in many seeds. Primula seed often germinates badly, but I have always had good results when I have sown the seeds on sphagnum, which retains sufficient moisture for their growth without the risk of the soil becoming sour. Where this practice is adopted it will not be necessary to cover the pots in order to keep the surface moist. Shading and covering of the seed-pans are often overdone. I always prefer standing seed-pots in places where they can be fully exposed to the light, but where the direct sun's rays cannot reach them. I never place seed-pans in a close propagating-pit. I have succeeded best when raising Begonias with pots stood on the open stage, with no covering or shading. The seeds may germinate more readily under heavy shading or in a close atmosphere, but there is great risk of losing the seedlings by damping-off almost before they are large enough to be seen. I have had the best results with many spring-sown seeds when the pots have been stood on a shelf close to the glass. Under these conditions care must be taken to see that the pans do not become dry. A good plan is to stand the pots in saucers containing water, which, if the soil has been well watered before sowing, will supply sufficient moisture until the seeds have germinated.

Conifer-seeds give some trouble in raising, but if they be soaked sufficiently before they are sown, and are only placed just below the surface of the soil, there will be less chance of failure. Those growers who handle Palm-seeds should remember that though of such a hard substance the embryo will perish quickly if exposed to a dry atmosphere. Palm-seeds should be sown as soon as received, or if they must be kept for a time they should be stored in a moist place. I have seen seedling Palms damp off through their not being able to come to the surface of the ground on account of the seeds having been buried too deeply.

Sowing seeds too thickly is an evil which is often practised, especially in the case of very small seeds. I have seen Petunias lost through this error, also Lobelias. Such small seeds as these require no surface covering at all, and may be placed in a light, sunny position as soon as sown.

Aster-seed gives best results when well exposed to the light, and though it may not germinate quite so quickly, the seedlings when they do come through will be short and sturdy. I have never failed with Eucalyptus Globulus, when the seed-pots have been put on a shelf fully exposed to the sun, but in the shade the seedlings almost invariably damp-off soon after they begin to germinate. Seeds of Aralia Sieboldi are also short-lived, and must never be allowed to get quite dry. It is safer to sow these seeds as soon as they are received, but I have kept them for some months by putting them in a tin box and keeping it in a cool place. *A. Hemsley.*

BOOK NOTICE.

"The Book of the Potato."*

Seeing that the Potato has amongst edible vegetables long enjoyed the distinction of being the most fertile source of cultural methods, of literary comment and criticism, and has given rise to a wealth of physical and ameliorative or developing detail in the horticultural and agricultural press, it may well be asked what can there be concerning the Potato that is novel enough to justify the publication of yet another book on the subject. Perhaps the best reason that can be given by Mr. Sanders, the author of this publication, is that whilst so much has been written in the past concerning Potatos, it has been too fragmentary in nature and too widely diffused for the convenience of those who would gladly become more closely acquainted with Potatos and their culture: hence the book before us may be regarded as a compilation of what has been so often previously written about, but which is now presented to readers in more concrete form. The author thinks that the recent "boom" of a few would-be wonders in Potato varieties has done much to call public attention to Potatos. That may be so, but we think the formation of the National Potato Society has done more in that direction, and without doubt, even without Society or boom, the value of the Potato as an important article in our national diet would suffice to make it one of profound interest. The literary matter of the book is rather fragmentary, but seems to cover almost all the ground it is possible to find in relation to the tuber. Its introduction to Europe (an oft-told tale), its general history during the past century down to now; its botanical features, its employment as a profitable crop, soils and their treatment, suitable manures, with details as to experiments and general methods of propagation by sets of diverse sizes, by cuttings; storing tubers in winter; times and methods of planting, culture on farms and in gardens, or for exhibition, also for forced culture—these features follow each other, and if not always with relevance, at least with full and fair treatment. The rearing of new varieties is also dealt with, as are fungoid and insect pests, and the proper treatment in each case is fully described. That many of these "pests" give, after all, where culture is good, very little trouble, is certain; but then the description of them and illustrations do help to make a book. Some illustrations of what is described as black-scab or wart-disease will assist readers to understand it more fully than will mere descriptions. The disease is happily not common, and may be as a rule remedied by applications of gas-lime. There is also an illustration of what is known as the spindle disease, happily also very uncommon. That is evidenced on the tuber when the eye-buds affected with the fungus endeavour to make shoots, but only succeed in producing mere spindly growths of the size and texture of thread. All such tubers when found can be easily rejected and destroyed.

The proper way to cook Potatos is also explained, and some paragraphs are devoted to the uses to which the tubers may be put in the feeding of poultry and cattle. The book is profusely illustrated with representations of varieties now in commerce—rather too freely, in fact, as very many of these varieties will have passed out of common culture soon. The illustrations of Potato monstrosities might well have been omitted. Finally, the book concludes with a list of some 269 varieties in commerce, which shows how many really inferior varieties have in the past found names.

MARCH FLOWERS IN THE SOUTH-WESTERN COUNTIES.

By mid-March Anemone blanda has been in flower for several weeks, but gives promise of continuing its blooming season until plants of its Apennine sister, now pushing up strongly, are ready to expand their first blooms, and the white form of the Pasque-flower (A. Pulsatilla) is showing numerous buds, while A. fulgens, A. coronaria and its varieties, have brightened the borders for some time past. The common Arabis has been in flower for three weeks, and is now a sheet of white, but its double form has not as yet opened a single blossom. Aubrietias of various shades are commencing to paint the rock-work with soft colour, and the quaint little Dondia (Hacquetia) Epipactis holds aloft dozens of its attractive green-and-gold flower-heads, while the rarely-seen Gagea lutea, sometimes called the English Star of Bethlehem, is freely bearing its yellow flowers. Scilla bifolia and S. sibirica, with their white varieties, have been very beautiful, and the Chionodoxas are still with us. The most effective is certainly C. sardensis, a bed of Tulipa Greigi surfaced with this being now a glorious show of deep blue and scarlet. C. gigantea and C. Alleni appear similar and are unsatisfactory, rarely bearing more than two or three blossoms on a scape. A pretty and rare flower that has been very charming is Romulea pylea. This bears satin-white, starry flowers, about 2 inches across, with yellow throats, and has rush-like foliage. A clump with a dozen or two expanded blossoms glistening in the sun is a lovely sight. The sweetly-scented flowers of Daphne indica are now past their best, but Convolvulus Cneorum is just coming into bloom, and Clianthus puniceus, which ever since Christmas has held two or three expanded blossoms, is becoming slowly redder, though the zenith of its display is still some weeks distant. The Christmas Roses have given place to their Lenten sisters, and a collection of Mr. Archer-Hind's beautiful seedlings, pure white, deep maroon, and white delicately spotted with pink, are in full bloom.

It may be mentioned that Mr. Archer-Hind has presented to Messrs. Barr & Sons a selection of his best forms, so that these, which are certainly in advance of the named varieties of continental origin, should in course of time be distributed. Of Narcissi, such kinds as obvallaris, princeps, Golden Spur, cernuus pulcher, Santa Maria, the fine trumpet variety M. J. Berkeley, Soleil d'Or, and Victoria have already yielded their flowers, and Sir Watkin is just expanding. The Snake's-head Iris (I. tuberosa) has borne its satin-black and olive-green flowers, I. stylosa is still blossoming, and I. pumila, I. Chamæiris, and some of Mr. Caparne's hybrid Irises are now in bloom; while almost every bulb of the lovely I. tingitana, which often proves an extremely difficult species to flower, is blossoming grandly. Very different is the case however with the dwarf bulbous Irises, such as I. alata, I. persica and its varieties, I. reticulata, I. Histrio, and others, which absolutely refuse to become established whatever compost is employed.

The first flowers of Freesia refracta alba expanded in the open-air on the 18th, and the crowded flower-stems promise profuse bloom. The large Musk Hyacinth, Muscari moschatum major, is bearing numbers of its deliciously-perfumed but rather dingy yellow flowers; and the fine M. latifolium is throwing up strong bloom-spikes, while the curious Fritillaria persica is rapidly perfecting, almost a month before its usual time, one of its tall flower-stems hung with between twenty and thirty wide-mouthed bells, maroon-purple in colour. Hepaticas, blue, white, and red, are flowering in a partially shaded border, where Omphalodes verna and its white form are also blooming well; and the graceful little Thalictrum anemonoides has produced its fragile white flowers above its delicately-cut foliage. The first blossoms have opened on a large plant of Gazania longiscapa, which has now been in the open unprotected through three winters. Triteleia (Milla) uniflora is blooming lavishly, and the charming little Violet Cress, Ionopsidium acule, self-sown everywhere, is blossoming abundantly; indeed, there is no day in the year when some plants of this may not be found in bloom. The first of the Saxifrages to flower was S. Burseriana, followed by S. Boydii alba; but S. Boydii, the yellow-flowered type, has disappeared. S. Rhei superba is now in bloom, but the type is as yet only in bud. S. apiculata is a mass of pale yellow. S. Wallacei is commencing to flower, as are countless little rosettes of the annual S. cymbalaria, the bright green, ivy-shaped leaves being set with small, deep yellow blossoms. *S. W. Fitzherbert, March* 22.

---

* *The Book of the Potato.* By T. W. Sanders. Published by W. H. & L. Collingridge. Price 2s. 6d.

ORCHID NOTES AND GLEANINGS.

PHAIUS TETRAGONUS, RCHB. F.

A PLANT of this distinct and interesting species, which has not been recorded as flowering in gardens for many years, has lately been in bloom with Messrs. Charlesworth & Co., Heaton, Bradford, Yorks, who kindly sent a sketch of the plant and a flower. In habit it is very remarkable, its elongated, generally four-angled pseudo-bulbs being furnished with ornamental plicate leaves, from the base of one of which, about half-way up the stem, springs the scape, which is 9 inches in length, and bears at the top four flowers, each rather over 2 inches across. The flowers, which are of the true Phaius form, have the sepals and petals chestnut-red on the face, the sepals bearing three, and the petals one yellow line, the margins of both being yellow, and the reverse side greenish-yellow. The cream-coloured labellum is folded into a tube over the column, having its edges wavy, its interior is decorated with purple lines, and a downy covering around the callus. It was imported from Ceylon as Phaius luridus and it corresponds with that species in Thwaites' *Enum. Pl. Zeyl.*, 300 (1861), but the priority of Phaius tetragonus, Reich. f., in *Bonplandia* (1855), reduces P. luridus to a synonym.

Reichenbach based the species on Pesomeria tetragona (*Botanical Magazine*, t. 4442), a plant said to have been imported from the Isle of Bourbon. The Ceylon habitat is well authenticated, but I cannot find any verification of the Mauritius region record. It seems singular that it should be indigenous to such widely separated localities. The Hon. Walter Rothschild, who has made many discoveries in the eccentric geographical distribution of some animals and insects, and has incidentally learned much about the distribution of plants, informs me that it might have been conveyed from its original native habitat to the other locality by traders, who from the earlier days of maritime communication passed between Mauritius and Ceylon, bringing among other things tortoises to the latter country. Thus if the plant figured as Pesomeria tetragona really came from the Isle of Bourbon it might have been introduced from Ceylon.

The botany of the species seems much confused. The *Index Kewensis* refers the plant figured as Pesomeria tetragona to Phaius villosus, Blume, which in no way resembles it, the plant having rose-coloured flowers with a nearly flat labellum. Epidendrum tetragonum (*Thouars Fl. Iles. Aust. Afr.*, t. 34), is also referred to Phaius tetragonus, but it has little resemblance to that species except in the angular pseudo-bulb.

Phaius tetragonus in Ceylon often develops pseudo-bulbs 3 feet in length, forming with their Palm-like leaves and their three or four spikes of flowers on a bulb very striking objects, as I am informed by a correspondent. None of the other species of Phaius is like it in growth except the Indian Phaius mishmiensis, which has rounder and not angular pseudo-bulbs, and rose-pink flowers. *J. O'B.*

SENECIO AURICULATISSIMUS.

THIS graceful Groundsel was recently exhibited at one of the Royal Horticultural Society's meetings by Messrs. James Veitch & Sons. It is a native of British Central Africa and was first discovered by Mr. J. T. Last in 1887, near Milangi, and has been sent to this country also from several other localities, where it grows at from 4,000 to 6,000 feet elevation. Plants were raised at Kew from seeds sent in 1898 by Mr. John Mahon, who was then Government Botanist in British Central Africa. The species flowered in the conservatory at Kew in February of 1900, where it climbed one of the pillars and was very attractive. The auricled petiole, the orbicular reniform leaves, and the freely-flowered inflorescence are shown in Mr. Worthington Smith's drawing, which is reproduced at fig. 94. A full description by Sir Joseph Hooker and coloured illustration will be found in the *Botanical Magazine*, t. 7731. The species makes a very decorative pot plant, which will be admired by those who appreciate flowers regardless of their size.

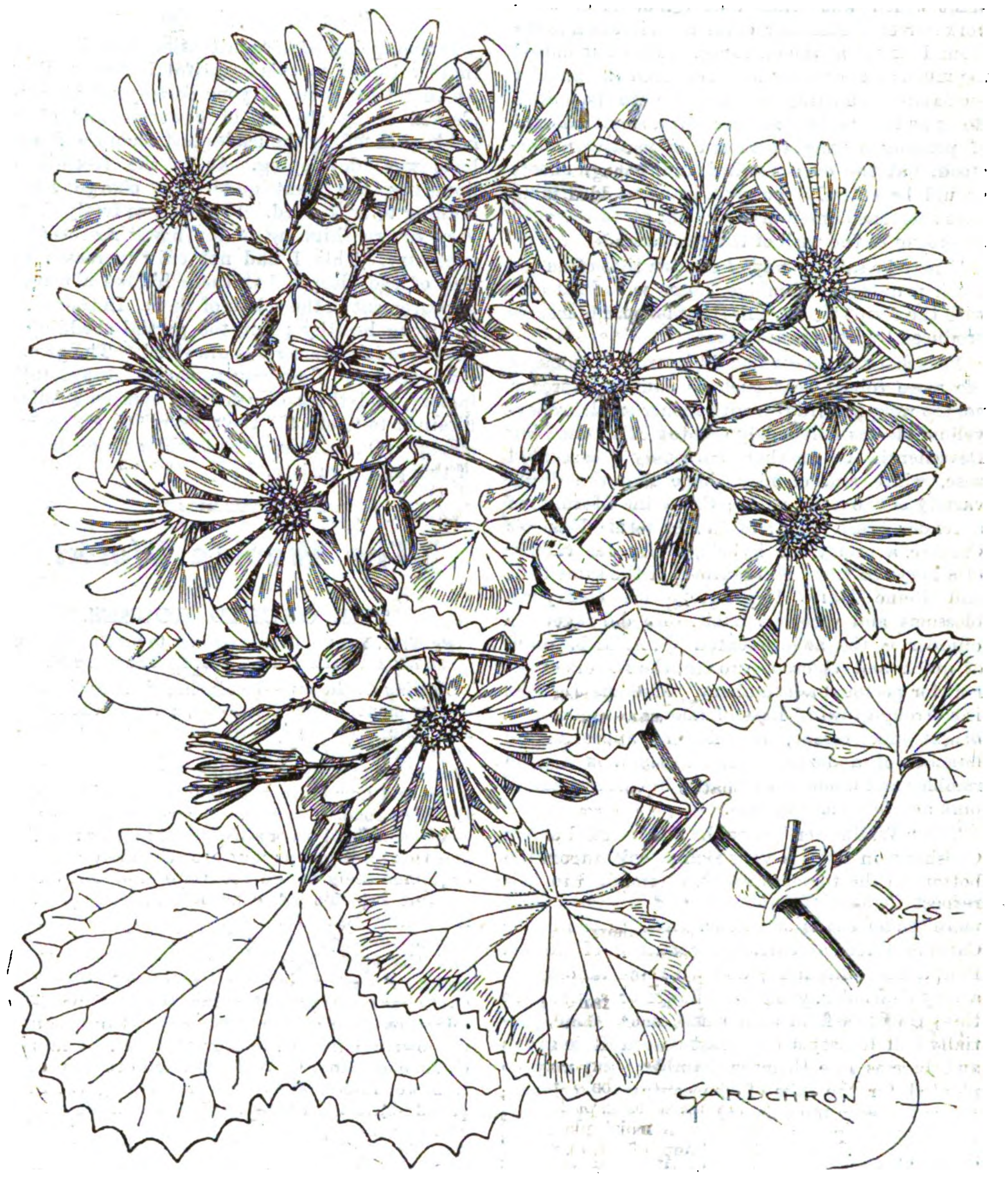


FIG. 94.—SENECIO AURICULATISSIMUS: COLOUR OF FLOWER GOLDEN-YELLOW.

THE ROSARY.

CLIMBING ROSES.

SINCE the advent of the so-called climbing Roses, which, by the way, do not climb, but must be trained and fastened in some way to the object that supports them, the stiff formality of the old Rose-garden has become obsolete in many country gardens. The favourite methods of displaying the charms of these varieties are by using them as coverings to arches of rustic woodwork, set widely apart or close together so as to form tunnels or arcades, as fancy may dictate to the owner or his gardener. "Pillar" Roses, with or without hanging chains connecting the pillars or posts, have a pretty effect if they are kept abundantly covered with flowering growths; and to have them thus good soil and abundant manuring are points needing annual attention from the gardener who would excel.

Sometimes the simple pillar form is the one adopted, and the effect is good in conjunction with wide borders on each side of a walk of not less than 10 feet in width, the Roses standing at 10 to 12 feet apart and 2 feet distant from the edge of the walk, this space being required in order to carry the growths and wide-flung tresses of blossoms beyond the reach of passers-by, a matter easily managed by means of long slings of raffia or string dyed of a green colour.

An arbour forms another pleasing mode of utilising Roses that make annual shoots of great length; but although an arbour is planned for affording shade, one that is to be covered with Roses must stand in a sunny aspect, unshaded by shrubs or trees, or the Roses will not succeed.

One of the best varieties for arbour planting is Félicité-et-Perpétue, a most abundantly-flowering plant, throwing perfect sheets of its small white flowers, and a growth of shoots and foliage when in vigour so dense as to form a close pent-house against sunshine. The writer once saw such a plant which was trained over a dome of wire-work 20 feet in diameter, covering it in down to the ground except at the entrance. This was indeed too much of a covering, as it rendered the interior too damp by shutting out the sun entirely. Such Roses as this variety require but a small amount of pruning as the operation is usually understood, but the over-crowded and weaker shoots should be entirely removed, and the remaining ones shortened one-fourth or left at full length according to the wish of the gardener.

It may be said by way of caution that often too much pruning of climbing Roses is carried out, with the result that we miss the fascinating masses produced by less pruned plants.

No arbour of Roses should be without some of the more robust Teas, such as Jaune Desprez, a not too rampant grower, with rather small bronzy-yellow blooms deliciously scented. The climbing Devoniensis is another agreeably tea-scented rose, white and of nice shape like the dwarf variety of the same name; Catherine Mermet, of a tender blush tint and full in form; François Crousse, a pretty tea hybrid, a vigorous variety of a fiery-red tint; Morgenroth, of the same tint; and Reine Marie Henriette, with cherry-red blossoms and vigorous habit. An old favourite climber is the sweet-scented W. A. Richardson, of quick and vigorous growth, the flowers excellent for personal adornmnent. Madame Desprez is a strong-growing Rose of another section, of a bright-pink colour, the flowers appearing in bunches of a dozen or more. Ruga is a good rambler and abundant bloomer, in tint a shade of pink and in form very full.

The "Wallflower," brought out by Paul & Son Cheshunt, in 1900, is very rich in bloom from the bottom to the topmost shoot, resembling in this respect Crimson Rambler, but of a lighter and more tender shade of colour. Add to the above Carmine Pillar, an earlier introduction of Messrs. Paul & Son, Cheshunt; Coupe d'Hebe, an old and a very charming, good-sized flower of a soft pink tint; Gardeniæflora with small, snow-white, partially full blossoms (this last-named Rose grows and blooms like Crimson Rambler, and may be planted for the sake of the contrast in colour); Mercedes, rosy-blush, a strong grower, flowering in bunches; Prairie Queen, ever blooming, has dark carmine-coloured, very fragrant flowers; Aglaia, one of M. P. Lambert's introductions of 1896, with light greenish-yellow flowers, is valuable from its novelty in colour, and from the fact that the blooms are produced in large pyramidal bunches.

I will finish my list with the names of a few indispensable varieties—viz., the Fellenberg, a Noisette, introduced fifty or more years ago. It possesses flowers of a dark crimson tint, and the buds are carmine before expanding, making, together with the brown-reddish foliage, a charming effect. Hermosa is very free in blooming, and of a tender rose-pink tint. A cross between Hermosa and Reine Marie Henriette has been raised, and is of a red colour, and worthy of a place.

A Rose arbour pure and simple is a summer shelter against the too ardent rays of the sun, and as such it requires neither a fixed roof nor close sides, the growths of the Roses affording the necessary amount of protection; it should, however, be made dry underfoot with tiles, wood blocks, or concrete, raised a few inches above the surrounding level of the garden. *M. F.*

A HYBRID ROSE.

M. Maurice de Vilmorin gives a coloured figure and description of a hybrid between Rosa microphylla and R. rugosa in the number of the *Revue Horticole* for March 16. The plant is intermediate in character between its parents, and possesses large depressed-globular fruits of a deep orange-red colour beset with fine prickles.

ROSE FORTUNE'S YELLOW.

In the spring of 1903 attention was drawn in these columns to this beautiful decorative Rose. At that time some of your correspondents complained of its shyness of flowering and of its habit of shedding the leaves just when the flower-buds were developing. As to the freedom of flowering, the plant under my charge leaves nothing to be desired. It blooms so freely that a very severe thinning of the flowering-shoots is necessary. This I find not only increases the size of the blooms, but there follows a marked improvement in the colour of them. In the case of a sltrong healthy plant, the partial shedding of the eaves is not a serious drawback. The growth made after the flowering season is always satisfactory, and there is generally sufficient foliage retained to "set off" the flowers. *H. P., Bournemouth.* [Our correspondent sent us some flowers of this pretty variety. ED.]

The Week's Work.

◆

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Potting Cattleyas.—Excepting during the early winter months some Cattleyas, many of the Lælias, and the hybrids therefrom, are continually arriving at that stage when the necessary potting operations should be carried through. To know when and how to do this places the cultivator on the high road to success. There are two periods at which a Cattleya or allied plant may be repotted, and these are just as new growths are developing or immediately before roots are produced on the current season's growth. The latter is probably the better time, for then as the roots enter the new material water may be afforded more freely, and the sphagnum moss preserved in a living state. From a cultural point of view the Cattleyas form themselves into two sections, determined by their season of flowering, thus C. aurea, C. Bowringiana, C. bicolor, C. gigas, C. labiata, C. Schofieldiana, C. Warnerii, and others proceed to flower immediately after developing their new pseudo-bulbs. These then make a new series of roots, and potting or re-surfacing should be done just prior to the latter event. The other section, embracing such specis as C. Mossiæ, C. Mendelii, C. Lawrenciana, C. Percivaliana, C. Trianæ, &c., mature their growths and pass through a season of rest before producing their flowers, and in their case potting may be done when they start to make new growths.

Materials for use in Potting.—Formerly good peat and freshly-gathered sphagnum-moss were the only materials recommended for forming a rooting medium, other than that used for draining the pots, but of late years other ingredients have been introduced, notably leaves. Without entering into the merits or otherwise of the latter, it may be safely asserted that where consistent personal attention cannot be given, leaves should be omitted from the potting material. That we shall have to find a substitute for peat is too evident, as the supply of really good peat is fast failing us; but whilst it is obtainable use it.

Method of Potting.—Pots or pans are better for most of the species, baskets being needed for very few. The drainage must be perfect, and is best obtained by the use of broken pots, the pieces being placed in the pots in as upright a position as possible. The depth of drainage material should be increased in proportion to the size of the receptacle, that is, small pots may have comparatively a greater depth of material than drainage; but in few instances should it exceed 4 inches, even when leaves are introduced. When about to pot a plant whose roots form a network outside as well as inside the receptable, carefully crack the latter in several places, and pick away such pieces as may be removed without injuring the roots, also as much of the old decayed material as possible. Cut off old leafless pseudo-bulbs, insert the plant in a receptacle which will afford space for about two seasons' extension, work in the requisite drainage material, and over this the rooting medium. Use good turfy peat, pressed inwards and not downwards, with patches of sphagnum-moss alternately. The rhizomes must not be covered, but be just on the surface, which should be slightly below the rim at the edge, and slope gently upwards towards the centre. Contrive to have the heads of sphagnum-moss uppermost on the surface, and even with it, and trim off the peat a little to give the whole a neat appearance. Much water should not be afforded newly-potted plants for some weeks afterwards.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Celery Trenches.—Make every effort to prepare Celery trenches in good time. The rows should, if possible, run from north to south, in order that the plants may obtain the full benefit of the sun's rays. The trenches for the earliest crops should be dug 18 inches in width, and should contain one row of plants, allowing 4-feet alleys between the rows. For the main and later crops dig the trenches 2 feet in width, and plant two rows of plants in each trench. The surface soil being the more fertile, remove no more than is necessary to make room for the manure, which should be plentifully applied. Finish the trench just below the general level. At Lockinge late crops planted at the level of the surrounding ground pass through the winter with little injury by reason of being drier than they would otherwise be. But this system cannot be practised on light, dryish soils that receive only a limited supply of water. Celery requires much water until growth is completed. Too early sowing of the seeds, or neglecting the plants in their young stages, will tend to develop the flowering spike prematurely, which is termed "bolting." From seeds sown during the second week in March for the early crop, we are now pricking out the seedlings in boxes filled with fine soil; this is kept well watered, and the plants afforded plenty of light and air to induce strong, sturdy growth. In a few days we shall sow seeds for raising the main crop.

Carrots.—The next ten days will be a suitable time for sowing the main crop of Carrots. The soil for this crop, having been dug in the early autumn, will now be in good condition, and if the ground has already received a dusting with air-slacked lime, then, before the seeds are sown, if a good dressing of soot is applied the insectivorous enemies of the Carrot will be considerably checked. Sow the seeds in shallow drills 12 or 15 inches apart, covering the seed lightly with the soil. Excellent varieties for sowing now are the Red Intermediate, Scarlet Model, and Carter's Blood Red. For cultivating exhibition specimens, bore deep holes and fill them with finely-sifted soil, preferably some old potting soil. Sow a few seeds in every hole, and later remove all the seedlings but one.

Peas.—Draw the soil well up on each side of the row as a protection and a support for the slender stems, and apply stakes directly the tendrils appear. Insert the stakes firmly in the ground each side of the row, at a distance sufficiently far removed to prevent injury to the roots. At Lockinge we place the stakes perpendicularly 12 or 15 inches apart, never interlacing or crossing the stakes at the top. This system allows the Peas sufficient space to develop between the two lines of stakes, and the work when well done has a good appearance. Small twigs or brushwood are stuck at the base of the sticks to give the Peas a start. Dwarfer varieties that are not usually staked are the better for being afforded short twigs or stakes, which will keep the pods clear of the ground.

Planting.—Although rain fell on twenty days during March (the quantity registered being a little over 4 inches), still on narrow borders, by the use of light planks, we were enabled to plant such vegetables as early Peas, Cauliflower, Lettuce, &c., the wet weather being favourable to the newly-planted plants.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Buds and Grafts.—Examine fruit-tree stocks budded last season, and cut down any in which the buds are not growing and graft them. This will be preferable to waiting until budding time again, as the time so gained amounts to one season. Remove the binding material from "buds" which are growing, and cut the stocks down to within 1 foot of the bud, but not shorter, as this portion of the stock is necessary to afford a means of support to the growth from the bud. This portion of the stock left last season (or twelve months earlier) should now be removed, and such work is termed "snagging." Around the interstices of the bud, under the binding material, American blight often hibernates, and if not destroyed by means previously stated, will kill the buds entirely.

Layering Fruit Trees.—Fruit-trees may be increased by layering in cases where a good strong branch can be spared near to the ground surface. Make a slanting cut about 3 inches in length in such a branch, followed by a second cut to remove a piece of the wood entirely; fix the part so cut firmly into the ground by means of a forked stick or peg, making the soil firm about it, and covering it with soil to the depth of 12 inches. When upon examination it is found that the layered branch has formed roots, it may be partially severed from the parent tree, increasing the degree of severance as the season progresses.

Insect Pests.—If any trees were not given a winter-dressing, this work may be carried out now, and trees which were dressed in the winter may with great advantage be sprayed again, using for this application a solution of Blundell's Paris-green paste; the paste is more easily mixed with water than the powder and is safer to use. Half an ounce dissolved in 12 gallons of water is a safe mixture to apply. In gardens where the use of these arsenical poisons is objected to an excellent insecticide and fungicide will be found in the Bordeaux-mixture, composed of 6 lb. of sulphate of copper and 4 lb. of unslacked lime. Place the sulphate of copper in a bag suspended in a wooden vessel containing sufficient water to dissolve it. Slack the lime in as little water as possible in a separate vessel, afterwards mix the two together, adding water up to 60 gallons. For use through a sprayer the liquid should be carefully strained to take out any residue from the lime. Gooseberry-trees that were badly attacked with caterpillars last year may again suffer this season. As soon as any caterpillars are noticed spray the bushes with Hellebore Tea, which is much more effective than Hellebore powder, and may be more quickly applied.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Figs.—The earliest trees grown in pots will soon show signs of swelling their fruits, which will not afterwards be long before ripening. A warm and slightly drier atmosphere will be necessary, also increased ventilation, and full exposure of the fruits to the sun's rays, in order to obtain good colour and high flavour. Remove all weak shoots as they appear, and pinch out the points of others. Afford liberal supplies of warm liquid manure, and apply rich top-dressings of loam and half-decayed manure to the roots of trees which are swelling their fruits. Syringe the trees freely, and do all that is possible to prevent red-spider.

Fig Trees in Borders.—The earliest of the trained trees grown on the extension system of training will require regular attention to thinning, tying down of shoots, and occasional stopping of strong shoots. The roots being in restricted borders should be encouraged to the surface by applications of decayed manure and abundant supplies of warm liquid manure. During the time the trees are in flower the temperature at night should be 58° to 60°, rising 10° higher during the day with fire-heat. Fire-heat should be discontinued early on bright mornings when there is a prospect of the temperature rising; employ a little ventilation when the atmospheric temperature is at 68°. Close the house early in the afternoon, and syringe the trees copiously. The latest trees in cold-houses where no fire-heat is used should be retarded as long as possible by admitting abundance of air to the house until growth commences.

Cucumbers.—The earliest spring-sown plants will now be in full bearing. Do not overcrop them, or it will be impossible to obtain from them a supply lasting over several months. Tie in the growths, and pinch out the points of the shoots at the first leaf beyond the fruits. Should the plants show signs of weakness, a little extra growth may be allowed. Apply light top-dressings of warmed soil as they become necessary, and afford liberal supplies of warm, weak liquid-manure now that the plants are fruiting freely. The temperature at night should be about 68°, and a little air may be admitted when the temperature has risen to 78°, allowing a further rise of 10° or 15° with sun-heat after the house is closed and in conjunction with abundant moisture. Some growers admit no air whatever through the ventilators, but plants so treated make gross growths, produce a heavy crop, but soon become exhausted, and must be replaced with fresh plants, or be allowed a considerable time to regain a satisfactory condition.

Frame Cucumbers should be given a little ventilation early on bright mornings, and the plants be encouraged to grow by syringing them lightly and closing the house early in the day until the plants become established. Do not overfeed the plants in the early stages nor subject the roots to excessive moisture. Place the fruits in glasses or on slates to prevent them from becoming blanched.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Euphorbia (Poinsettia) pulcherrima.—In order to have a batch of plants in flower early in November, these should be propagated as soon as growths are procurable for use as cuttings. Sufficient stock plants for the purpose should be put in a Cucumber-house or similar structure and plunged in a hot-bed of leaves. Syringe them often, but do not afford much water to the roots. When the growths are about 3 inches in length, detach them from the plants with a good "heel," and insert them singly in thumb-pots in old soil from the potting-shed, with a layer of silver-sand on the surface. Let the pots of soil stand in the house to warm an hour previous to being used, and insert the cuttings direct into them, plunging the pots without delay in cocoanut-fibre in a frame or under bell-glasses.

Euphorbia jacquiniæflora.—For supplying flowers for cutting this plant is invaluable, and when grown under the best conditions it forms a very striking feature grouped amongst foliage plants. If five or six stock plants be placed in heat and treated as advised for Euphorbia pulcherrima, they will yield a quantity of cuttings, and these will flower early in November. In the cultivation of this plant much light, heat and moisture are essential. A 48-size (5-inch) pot will contain all the soil they require, and should not be exceeded unless two or more plants are grown in a pot. This plan I do not advise unless grown for any particular object. The most suitable position for the plants to grow in is one in a low-roofed Cucumber or Melon-house, where as the plants make growth the shoots can be tied to the wires up the roof of the house, and be fully exposed to the sun's rays. They require careful watering at the roots, and should be syringed freely overhead during their season of growth.

Centropogon Lucyanus.—I prefer to propagate this annually, but it is by no means essential, as good flowers may be obtained from specimens several years old; but the plants themselves get out of bounds, and are not useful or handy for grouping; therefore for general purposes it is advisable to propagate a few each year. The plants are now starting into growth, and should be afforded a copious watering; and if to be grown-on should be shaken out of their pots, the old soil reduced, and the plants repotted in a compost of loam and peat in equal proportions, with a little silver-sand and some small charcoal added.

Cinerarias, Primulas, &c.—A few seeds of each of these should be sown now in pans containing finely-sifted soil. Place the pans in a warm, shaded house until the seeds have germinated. Plants that are developing their flowers should be given frequent applications of weak liquid-manure obtained from the soaking of sheep-dung, and they will require to be shaded on hot, sunny days.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Seeds.—Sow on a slight hotbed seeds of Amaranthus caudatus, Acrocliniums, Marvel of Peru, Marigolds, and Zinnias. Prick off seedlings of Antirrhinums into rich soil in frames when large enough to handle, also Nicotianas, Mimulus, &c.

Sweet Peas.—The ground for these should be deeply dug and some good turfy-loam and rotten manure mixed with the soil. Apply a sprinkling of superphosphate of lime and bone-meal. It pays to sow the seeds in pots, as the extra trouble involved reduces the risks of loss from the attacks of slugs and birds. Sweet Peas require much space, overcrowding being fatal to success. It is on record that nearly 500 sprays have been gathered from one plant in a season, and about fifty sprays at one gathering.

Kniphofias that were divided and potted last autumn and have been kept in a cool-house may be planted now. They may also be increased by division in spring. Kniphofias thrive in a warm situation in a deep, rich, but light soil containing liberal supplies of rotten manure and leaf-mould. Do not disturb established clumps, but reduce the winter coverings that have protected these. Amongst the autumn-flowering sorts, K. aloides maxima, K. corallina superba, and K. Pfitzeri are good; K. Tuckii flowers in June, K. caulescens has bluish-grey foliage and flowers early.

Cortaderia argentea.—Now is a good time to plant Pampas grass in a sunny position sheltered from winds, employing a light soil enriched with plenty of stable manure.

Eryngiums require deep sandy soil, and planting should not be delayed after this date. E. Oliverianum superbum is remarkable for the intense glistening blue colour of its stems and flowers. E. giganteum is silvery-white, E. alpinum flowers early, and E. planum late.

Hardy Heaths grow best in peat, but will thrive in most soils that are free from lime. When planting, put leaf-mould or peat obtained from the fells about the roots, to give them a good start. Erica carnea and E. codonodes are flowering well this month. The many varieties of E. vulgaris are all good, particularly alba, alba var. gracilis, Hammondii, Alportii, aurea, and cuprea; the copper-coloured is very distinctive. Other choice varieties of Ericas are E. ciliaris, E. cinerea, E. Tetralix, and E. vagans. If propagated in autumn and kept in a cool frame, then transplanted in due course, Ericas make nice plants in two seasons.

Alpine Plants, &c., of dwarf and spreading growth, suitable for planting about the steps of a rockery: Acæna inermis, Antennaria tomentosa, Arenaria balearica, Dianthus deltoides, Erinus alpinus, Sedums, many varieties, Thymus Serpyllum.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY,	Apr. 10	Birmingham Mutual Improvement Society Meet.
TUESDAY,	Apr. 11	Royal Horticultural Society's Committees Meet. National Rose Society's Committee Meet. Devon Daffodil and Spring Flower Show at Plymouth (2 days). Brighton Spring Flower Show (2 days). British Gardeners' Association Meet. at Sutton.
WEDNESDAY,	Apr. 12	Shropshire Horticultural Society's Spring Flower Show at Shrewsbury. Chester Paxton Society's Spring Flower Show (2 days).
SATURDAY,	Apr. 15	Kidderminster and District Horticultural Society's Daffodil Show.

SALES FOR THE WEEK.

MONDAY and FRIDAY NEXT—
Japanese Liliums, Fruit Trees, Hardy Border and Herbaceous Plants, Begonias, &c, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

WEDNESDAY NEXT—
200 Azaleas mollis, Palms, and Plants; 1,000 Fruit Trees, Perennials, Carnations, Liliums, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Unreserved Sale of Duplicate Plants of the Walton Grange Collection of Orchids, at Walton Grange, Stone, Staffs., by Protheroe & Morris, at 12.30.—Roses, Palms, Azaleas, Gladioli, Lilies, &c., at Stevens' Rooms, at 12.30.

FRIDAY NEXT—
Importation of Vanda Sanderiana and numerous other Imported and Established Orchids, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —47·6°.

Actual Temperatures:—

London.—*Wednesday, April* 5 (6 p.m.): Max. 55°; Min. 41°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 6 (10 a.m.): Bar., 30·1; Temp., 44°. Weather—bright, with cold winds.

Provinces.—*Wednesday, April* 5 (6 p.m.): Max 49°, Bournemouth; Min. 45°, W. Coast of Wales.

William Paul. By the death, on March 31 at Waltham Cross, of William Paul British horticulture loses one of its most distinguished representatives. He was in his eighty-third year. Naturally he had for some time past retired from active participation in those duties in the execution of which he had been for so many years zealous beyond measure. Nevertheless, almost to the last his mental powers were keen and his interest in matters horticultural relatively unabated.

So long as the Rose remains an object of attraction, so long will the memory of William Paul be treasured. For it is as a rosarian that he is best known. Few, if any, knew Roses as he did; few could more truly gauge the public taste with regard to them; few could grow them better; few knew better how to display them to advantage. Comparatively early in his career we find him advocating the culture of Roses in pots (then a novelty), and inveighing against the formal ugliness that still characterises the ordinary Rose show. To the last he showed us by many examples the better and more artistic way of exhibiting Roses.

Among the Roses which he raised the following are some of the chief:—

Beauty of Waltham
Boadicea
Clio
Corallina
Crown Prince
Duke of Albany
Earl of Warwick
Ella Gordon
Enchantress
Little Gem (Moss)
Lord Macaulay
Magna Charta
Medea
Morning Glow
Pride of Waltham
Queen Mab
Star of Waltham
Sulphurea (Tea)
White Lady
Waltham Climber

But Roses did not monopolise Mr. Paul's attention. Hollyhocks, Hyacinths, Camellias, Hollies, Ivies, Pelargoniums, decorative shrubs, the profitable culture of fruit-trees, these are only a few of what may be called his specialities. His sympathies, in fact, ranged almost over the whole field of horticulture. We say almost, for an exception rises to our minds—we do not recall any saying or writing of his relating to Orchids. With this exception, if it be an exception, William Paul was catholic in his sympathies as regards horticulture.

When, some years after the death of his father, William Paul founded in 1860 the present Royal Nurseries at Waltham Cross, his zeal, energy, and intelligence soon ensured such a measure of success that for many years the nursery has ranked among the foremost in the kingdom.

It is certain that, with such endowments as he possessed, his career would have been equally successful had he chosen literature, art or science as his sphere of work. Circumstances led him into a business career, in which he achieved success; but either literature or art or science was assuredly the loser. We have sufficient proof of this in his *Contributions to Horticultural Literature*, a book published in 1892, wherein he gathered up into a whole a small number of his contributions to the horticultural Press. In their perusal it is easy to appreciate the intelligent grasp of the subject he had in hand, easy to recognise the clear, fluent, sometimes trenchant style in which his writings were couched. He wrote because he had something to say, and what he said he said well.

The Late William Paul, V.M.H.

Loudon discovered his talents, and for a short time he lent his aid to that industrious and zealous writer, who did so much for the spread of horticultural knowledge. Loudon died in 1843, and then Lindley, ever keen in recognising and utilising ability, availed himself of the services of the young aspirant. As far as we know, William Paul's earliest contribution to the *Gardeners' Chronicle* was in 1843, the subject "Pot Roses." So that up to a few days since we might have claimed William Paul as, if not our oldest living contributor, yet certainly one of the very few who have been associated with the *Chronicle* from its institution in 1841 up to a recent period, when his advancing age deprived us of the help of his ready pen. For some years also he was concerned with the late Dr. Hogg and Mr. Thomas Moore in the editorship of *The Florist and Pomologist*.

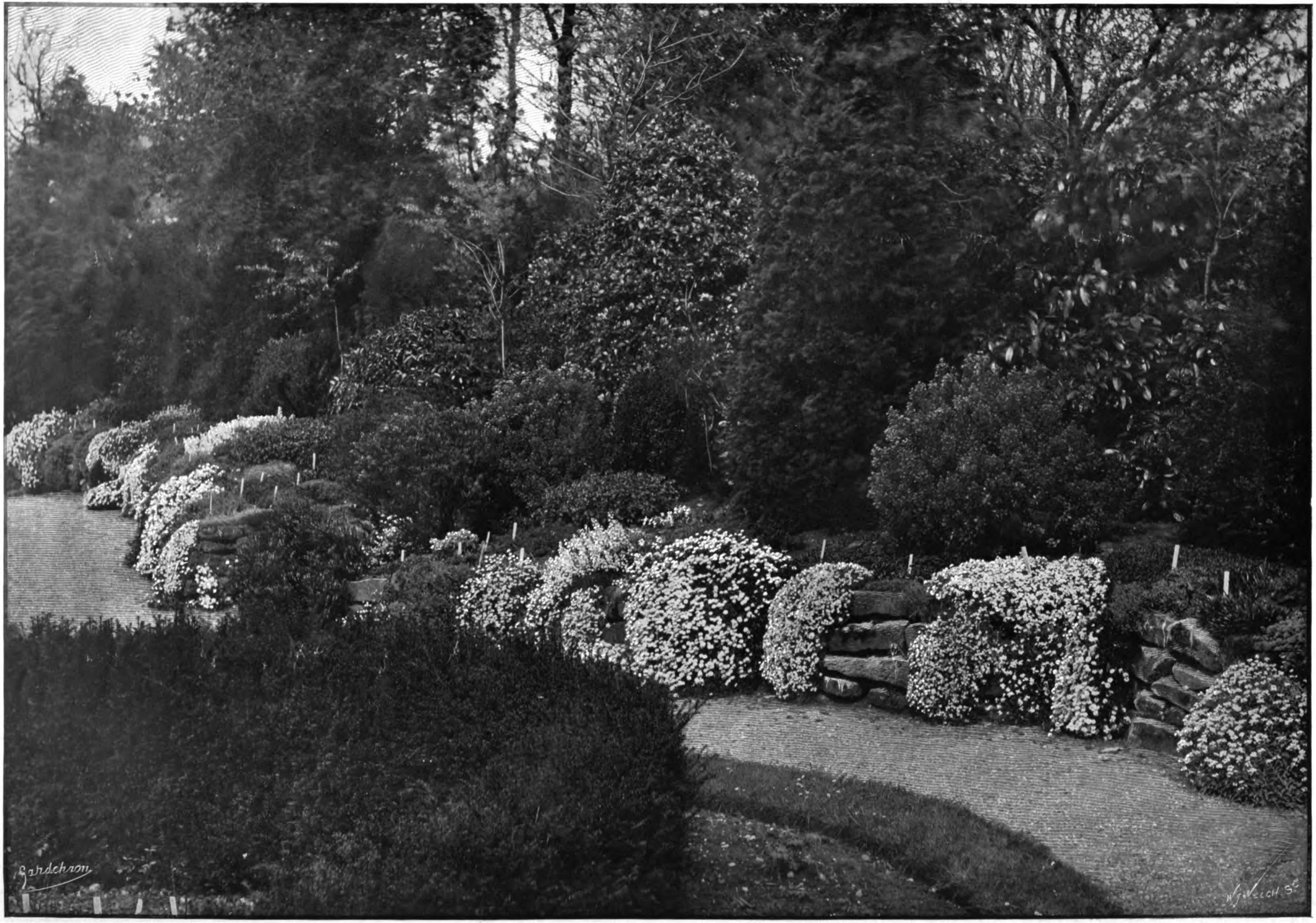
It was not only in the periodical Press that William Paul made his influence felt. Articles in the Press, however valuable, are more or less ephemeral. Collected in book form they are more persistent and more accessible. Hence *The Rose Garden*, now in its tenth edition, comprises a body of sound information and judicious comment not to be found in equal measure elsewhere. As a richly illustrated book that work is necessarily expensive, but to meet the public demand William Paul issued book after book, edition after edition, adapted to the requirements of those with moderate means. His literary achievements are, however, so well known and appreciated that we need make no further allusion to them.

We have said that had he so chosen he might have made for himself a reputation in science. If the reader will consult Mr. Paul's lecture on the "Improvement of Plants," wherein he narrates how he "improved" the common Parsley, the Brussels-Sprouts, the Aster, the Hollyhock, and a host of other flowers, in addition to the Roses which have conferred fame on the Waltham nurseries, and some of which are above alluded to, he will see that the procedures adopted were not merely of a casual, hit-or-miss nature, but were methods based upon accurate observation and careful inference. In these days when so much attention is bestowed on variation and hereditary transmission, this lecture deserves the most careful study. It was read at a "provincial show" held at Manchester in 1869, under the auspices of the Royal Horticultural Society, and happily is reprinted in the *Contributions*, to which we have already alluded. It is one of the most important memoirs in the scientific horticulture of our time, and will prove of great value to those concerned in substantiating or refuting the Mendelian hypothesis, De Vries' theory of "mutation," or experimental horticulture generally.

It may here be mentioned incidentally that Mr. Paul collected a library, in which he took great delight, and which is extraordinarily rich in books on gardening and garden botany.

As to his artistic tendencies we have already alluded to the improvement he introduced in the method of showing Roses. An editorial article in these columns on July 25, 1874, was followed up by an object-lesson by Mr. Paul at the Royal Botanic Society, which elicited a large meed of approbation. From that time to this the firm has acted on the same plan, and at the last Temple Show the crowning award of the Veitchian Cup, allotted to the best exhibit in the Show, was given to the collection of Roses shown by Messrs. W. Paul & Son, and arranged artistically in accordance with the principles already mentioned.

Further illustrations of the artistic faculty possessed by Mr. Paul may be found in his lectures on ornamental trees and their disposition on landscape gardening, the



Spring Garden in the grounds at Highbury, near Birmingham, the seat of the Right Hon. Joseph Chamberlain, M.P.

arrangement of colour, the dressing of florist's flowers—"floricultural millinery" he termed it—and other similar subjects.

We have said enough to justify our contention. For the matter of that nobody who had the pleasure of knowing the man would question it. Naturally, one so full of ideas, so replete with knowledge, so expert in practice, took a prominent part in the public life of horticulture. He was at one time rarely absent from public functions, and as a fluent and eloquent speaker effectively contributed to the promotion of any cause in which he was interested. He was one of the Executive Committee of the famous 1866 Exhibition, and was one of the earliest of those on whom the V.M H. was conferred. Truly may we say, "There is a great man fallen in Israel!"

Our Supplementary Illustration to the present issue presents a view of part of the rock garden in the Right Hon. Joseph Chamberlain's garden at Highbury, near Birmingham. This particular portion is known as the "spring rock-garden," because the species of plants are those that bloom very early in the season, as Arabis, Aubrietia, &c. Our readers will see that they flower very profusely and give to the path a bright and attractive appearance. We refer to recent numbers for other illustrations and full details relating to this garden.

Royal Horticultural Society. — The next meeting of the Society's Committees will be held in the Hall, Vincent Square, on Tuesday, April 11, when a lecture will be delivered by Mr. T. J. Powell on "Retarded Potatos."

Surveyors' Institution.—The next ordinary General Meeting, being the second of the two afternoon meetings arranged for the convenience of country members, will be held in the Lecture Hall of the Institution on Monday, April 10, 1905, at 4 p.m., when a paper will be read by Mr. H. M. Cautley, A.R.I.B.A., entitled "Farm Buildings."

Potatos.—According to the reports of experiments made at Burgoyne's Farm, under the auspices of the Cambridge University, Department of Agriculture in 1903—1904, the best of the newer main crop varieties was Dobbie's Factor; the best new second early was Findlay's Royal Kidney. The Potatos which resisted disease best were Sutton's Discovery and Findlay's Evergood. Whole tubers rather than cut sets were decidedly best, and tubers weighing nine to ten to the pound, that is about 1½ to 1⅝ inch, were most suitable. However desirable such experiments may be, they are such as could and should be undertaken by the growers themselves. From a University Department we look rather for scientific research than for practical demonstration.

Potatos in 1904.—We extract the following notes from *Agricultural Returns*, 1904, published by the Board of Agriculture:—

> The total production of Potatos has only three times previously been exceeded, the greatest crop on record—3,743,203 tons—having been returned in 1884. England and Scotland both had, in 1904, a yield per acre largely above average, the former by 6 cwt., the latter by almost 30 cwt., while an average of over 7 tons per acre, as was secured in Scotland, has never previously been noted in any of the three divisions of Great Britain. Wales was not so fortunate, the 4·84 tons per acre there returned representing about 12 cwt. less than the mean. The best results in England were secured in Lancaster, with nearly 2 tons more than the average; while crops of about a ton over normal were secured in Bucks, Chester, Cumberland, Durham, Norfolk, Northumberland, Salop, Stafford, and Surrey. On the other hand the yield fell below the mean by over a ton in Cambridge and Cornwall. Lincolnshire, the chief Potato-growing county, had a deficit of one-third of a ton per acre. In Scotland, one county only, Dumbarton, fell slightly below the normal. Banff and Kinross had almost 3¼ tons above the average; while Bute, Caithness, Fife, and Forfar were all more than 2 tons to the good. The largest yield recorded in any single county was 9·45 tons on the small area in Clackmannan, while Banff also secured over 9 tons to the acre.

Mr. Dinter, who for the last eight years has been in German S.W. Africa, writes to say that he is about to return for a few months, and that his address from May 10 to September 10 will be —Herr Botaniker Dinter, Bautzen, Saxony.

Diseases of Trees.—We learn that the Board of Agriculture has issued a series of coloured diagrams, prepared at Kew, illustrative of some of the more frequent diseases of trees. Each sheet may be had for 1*s*., and the whole set, post free, for 9*s*. 5*d*. A descriptive account is given, together with an indication of the remedial measures to be taken in each case. Among the nine are illustrations of Apple canker, Larch canker, Peach-leaf curl, &c. Any bookseller can supply them, or direct application may be made to Messrs. Wyman & Sons, Fetter Lane, E.C.

Geo. Monro Concert Committee. — We are informed that the concert held on February 23, realised a profit of £46 14*s*.; out of this sum donations have been given to trade charities, &c., as follows:—Gardeners' Royal Benevolent Institution, £10 10*s*.; Wholesale Fruit and Potato Trades Benevolent Society, £5 5*s*.; Charing Cross Hospital, £5 5*s*.; Surgical Aid Society, £5 5*s*.: Royal Ophthalmic Hospital, £2 2*s*.; Royal Lifeboat Institution, £2 2*s*.; Geo. Monro, Ltd., Pension Fund, £2 2*s*.; Geo. Monro, Ltd., Outing Fund, £2 2*s*., the remainder being placed to the reserve account.

An Impostor.—Gardeners in the neighbourhood of Liverpool are cautioned against a man who states that he is "out of work." His story is plausible, but does not bear investigation, and the police have already received a complaint about him.

Reorganisation of the Buitenzorg Botanic Garden.—The Agricultural Department, Buitenzorg, was instituted by Royal mandate on July 28, 1904, and is now in operation. The establishment consists of gardens, trial-fields, laboratories, museums, &c., in connection with which are special sections, notably those for forestry and veterinary study, and the Government Coffee and Cinchona plantations. It is in name that the establishment is altered; the various sections will be maintained as before. It is proposed to form during the year new laboratories for the study of indigenous products, and for bacteriology and field geology, a maritime zoological station, and several meteorological field stations. Natural sciences, more particularly botany, are placed under the department, which in this matter replaces the Buitenzorg Institute, with instructions to keep up all the traditions. The publication of the *Annales du Jardin Botanique de Buitenzorg* and of the *Icones Bogorienses* is continued with no change of names. The Bulletin will be entitled *Bulletin du Département de l'Agriculture.*

Produce from the Channel Islands and Egypt.—The *Sussex Daily News* for April 3 stated that the average number of boxes of cut flowers received daily at Newhaven from the Channel Islands is about 2,500, and in addition to this there are about 2,000 packages of other produce, made up of Radishes, Green Peas, Kidney Beans, New Potatos, ripe Figs, Tomatos, Melons, Cucumbers, and Asparagus. The bulk of this is for the London markets, and the North, viâ London. There are also large quantities of Onions imported through Dieppe. These are coming from Egypt, and the number of sacks on two days last week was about 6,000—equal to 300 tons. The Guernsey service is a daily one, and two fast steamers are engaged in it.

New Public Garden at Norwich.—By the widening of Bishopbridge Road, Norwich, and through the levelling of the slopes to the river, the people of Norwich have acquired a valuable open space of ground, which has been laid out as a public garden. The slopes themselves—to be known henceforth as "Bishopbridge Garden"—promise to become very beautiful. Mr. J. Ward, the Parks Superintendent, has carried out this portion of the scheme in a very thorough manner. Upon the face of the slopes paths have been cut out and levelled, and beds made for the reception of selected varieties of flowering shrubs.

Publications Received.—Circulars and Agricultural Journal of the Royal Botanic Gardens, Ceylon, Nos. 22, 23, and 24. *Plant Breeding*, by R. H. Lock; *Ground Nuts in Ceylon*, by Herbert Wright; *Varieties of Cacao in the Gardens and Experiment Station at Peradeniya* by R. H. Lock. Nos. 25 and 26, *The Castor Oil Plant in Ceylon*, by Herbert Wright; *Plant Breeding* (Part II.), by R. H. Lock. Nos. 27, 28. and 29, *Plant Breeding* (Part III.), R. H. Lock; *Branch Canker in Tea*, J. B. Carruthers; *Canker* (*Nectria*) *of Para Rubber* (*Hevea Brasiliensis*), J. B. Carruthers.—*Journal de la Société d'Horticulture du Japon*, December 15, 1904. Contents: Citrus medica et sa Culture, by M. Sasaki; M. Onishi, Choix des Variétés de Pêche; M. Furukawa, Anemones chinensis and cernua; and M. Murakami, Culture des Chrysanthèmes.—*Bulletin du Jardin Impérial Botanique de St. Petersbourg.* Tome IV., livraison 6. A new building intended for seed trials and as a phytopathological centre has recently been finished. It is in connection with the botanical museum and biological laboratory. Three large glasshouses and other additions have also been completed lately.—*Lehrbuch des Gartenbaues*, von Max Löbner (verlag von T. Schmidt, Zurich).—*Annalen des K. K. Naturhistorischen Hofmuseums*, von Dr. F. Steindachner (Wien, H. Hölder).—From the U.S. Department of Agriculture, Bureau of Plant Industry, come the following Bulletins:—No. 51, Miscellaneous papers. I. *The Wilt Disease of Tobacco, and its Control*, by R. McKenney; II. *Work of the Community Demonstration Farm at Terrell, Tex.*, by S. A. Knapp; III. *Fruit Trees Frozen in* 1904, M. B. Waite; IV. *Cultivation of Australian Wattle*, D. G. Fairchild; V. *Legal and Customary Weights per Bushel of Seeds*, E. Brown; VI. *Golden Seal* (*Hydrastis canadensis*), by Alice Henkel and C. Klugh. Bulletin No. 56—*Nomenclature of the Apple*, compiled by W. H. Ragan. Bulletin No. 66—*Seeds and Plants Imported from September*, 1900, *to December*, 1903, Inventory No. 10.—No. 71, *Soil Inoculation for Legumes*, by G. T. Moore. No 72, Part II, *Salt Water Limits of Wild Rice*, by C. S. Scofield.—*Boletin do Museo Goeldi-Historia Natural e Ethnographia-Pará, Brasil* (1904).—The Royal Society for the Protection of Birds: *Fourteenth Annual Report*, to December 31, 1904. This Society is now incorporated under Royal Charter, and does excellent work in seeking to preserve from reckless destruction all birds, from the peacock of India to the wren of St. Kilda. At the recent annual meeting, Dr. E. A. Wilson, of the Antarctic Expedition, pleaded for protection for penguins. — *Agricultural Experiment Station, University of California, Report from June*, 1903, *to June*, 1904. The number of students having greatly increased, new buildings are necessary; the University Farm also is now too small. Soil Physics and Geology and Agricultural Products are dealt with; also Viticulture, Economic Botany, and Plant Pathology. and there are stations devoted to general culture.—From the New Hampshire College Agricultural Experiment Station, *Sixteenth Annual Report.* Satisfactory progress was made during 1904. Also Bulletin No. 116: *The Inspection of Feeding Stuffs in* 1904.—*Agenda Horticole*, 1905. (Paris: Librairie Horticole, 84 bis, Rue de Grenelle.) A useful notebook and diary full of hints and tables.

KEW NOTES.

Clerodendron myrmecophilum, *Ridley* (see *Gardeners' Chronicle*, April 9, 1904, fig. 98).—A fine group of this handsome and comparatively new species is now the chief feature in the Stove (No. 9). It is quite distinct from all the other members of the genus under cultivation, for they are usually vigorous climbers or well-branched shrubs, whereas C. myrmecophilum has a stout, erect, and generally unbranched stem, plants with more than a single stem being quite exceptional. The opposite leaves are oblong-linear in form, and about 1 foot in length, having a silvery sheen on the upper surface. The plant generally carries about six pairs of leaves at the flowering period. The erect panicle of rather large ochreous-red flowers is usually 1 foot in height, produced on a stem of from 1½ to 2 feet high. The panicle is pyramidal in form, the flowers are very numerous and showy, making a handsome inflorescence. During the development of the flowers the buds gradually move into three distinct positions; when first produced they are erect, and almost at right angles with the pedicel; they then gradually twist round until the apex of the bud points directly downwards; and eventually, by the time the flowers are ready to expand, they stand out horizontally from the stem.

This species first flowered at Kew in April, 1902 having been sent to the Royal Gardens in 1896 by Mr. H. N. Ridley, who discovered it in the dense forests of Singapore. The plants now in flower are from cuttings rooted nearly twelve months ago. Plenty of heat and moisture are necessary for its successful cultivation.

Chloræa longebracteata, *Lindley*.

A plant of this uncommon terrestrial Orchid is now flowering in the Odontoglossum-house. It is a native of Chile, where it is found growing on the rocky plateaux in great abundance. The species was sent to Kew by Mr. F. W. Burbidge in January, 1903, when it was figured for the *Botanical Magazine* (t. 7909), but failed to flower in the following year. This year it has made a good rosette of leaves, and is carrying a spike about 1 foot in height, having twelve flowers, which are rather more than an inch in diameter. The sepals and petals are white, the two lateral sepals being tipped with a solid, fleshy, green, horn-like tip. The labellum is orange-coloured, with several green crests.

It is a pretty and exceedingly interesting Orchid, though unfortunately it belongs to a genus which is rather difficult to manage under cultivation. The Kew specimen of C. longebracteata was collected by Mr. Warburton, who says of it that "it always seemed to us that the plants grew in what were about the driest places possible, where the ground was so hard that it was difficult to dig them up with a garden trowel." (Syn. with Asarca sinuata, Lindl.) *W.H.*

Cynorchis kewensis

is a very beautiful terrestrial Orchid with rich lilac flowers, now in bloom in the Orchid-house.

Ceanothus thyrsiflorus.

This, which was the subject of a recent illustrated notice, is already showing flower.

Fritillaria aurea.

A batch of this pretty species is very attractive just at present under the wall in the herbaceous ground.

Thlaspi latifolium.

This bright, white-flowered Crucifer is in full bloom in the herbaceous ground, and is so conspicuous that it deserves to be better known. It would be well adapted by its dwarf habit for spring bedding.

Muscari.

It is just the time for these quaint and attractive plants; M. botryoides and M. racemosum, which throw their bold spikes of rich blue flowers well above the foliage, are among the best.

Narcissus Humei,

a large-flowered Daffodil with long, pointed, pale segments, is very conspicuous; so in their way are N. cyclamineus and the yellow Corbularia (Citrinus).

Iris assyriaca

is very distinct with its lax, strap-like decurved foliage and erect spikes of pale blooms. I. orchioides is of dwarfer habit, and has yellow flowers.

Prunus triloba

is one of the loveliest of spring-flowering shrubs, and the botanist likes to get hold of its flowers, for they often show from two to five more or less leafy carpels revealing their presumed ancestral condition.

The Alpine House

is filled with pretty things. Trilliums, Erythroniums, Muscaris, Saxifraga Grisebachii, a most distinct and pretty species with its erect, pink-coloured flower-spike; Anemone ranunculeides, with bright yellow flowers; Saxifraga retusa, a gem with minute foliage and rich rosy-lilac flowers. Androsaces are remarkable for the variation they show in their foliage, the newly-formed leaves being markedly different from those of the autumn-formed rosettes. There are so many beautiful things in this house that to catalogue them would be irksome; the best thing is to go and see them.

The Greenhouse No. 4 is, as usual, full of colour. Its contents are so diversified that we must necessarily confine ourselves to the statement that this house is, if possible, more attractive than ever.

Magnolia stellata.

A bed of this dwarf deciduous Magnolia is particularly attractive with its conspicuous white flowers.

THE APIARY.

Purchasing Bees.—If it is decided to buy a stock in a skep it is well to do this early in the season before the combs contain much honey, there will then be less liability of the combs breaking down whilst transferring them to their new position. Before buying it will be well to make an examination of the condition of the colony.

How to Examine the Hive.—Give the bees a puff of smoke and wait a minute or two, then give another puff and overturn the skep. This done, scrutinise the combs to see if they are mouldy. Press the combs apart in the centre with a view to finding out whether there is any brood, and in this way you should make certain that there is a queen, and that she is fertile.

How to Move Them.—Tie a piece of cheese-cloth over the mouth of the skep and carry the whole, without any unnecessary jarring, mouth upwards.

Swarms.—One of the best methods of commencing bee-keeping is to purchase a good swarm as early in the season as possible. A really good swarm would weigh about 6 or 7 lb., or about 2 gall. in quantity. If they are bought of a dealer the price would not be less than 3*s*. 6*d*. per lb.; but in this case he would guarantee that the swarm is headed by a young and prolific queen. The above price would not include carriage.

The requisites for a Beginner.—The first thing is a hive well painted and fitted up with good foundation, worker base, and not less than eight sheets to the pound. Make quite certain that the foundation is securely fastened in the frames, or disaster is certain. It would be well to make a bee-veil of coarse black net. This always gives a sense of security; when handling bees, shun gloves of any description. Buy a smoker of good make, sections in the flat, some good worker base foundation (extra thin), some metal separators, and make a section crate.

How to Treat the Swarm when Received.—Take off the covering and shake out the bees in front of the entrance to their new home, which has been previously fitted and made snug. Let this be done in the evening. As their new home is without stores and the weather may not be suitable for the bees to make a flight in search of food, it will be necessary to feed them on syrup for a short period. Disturb the bees as little as possible, and place a good supply of quilts on the top of the frames. *Chloris.*

"Dicks' London Street Guide." — A useful list of London streets arranged in alphabetical order, with indications of the nearest main thoroughfares, and of the nearest railway station. It is amply worth the penny it costs, and may be had from John Dicks, Effingham House, Arundel Street, Strand, London.

Liverpool Botanic Gardens. — There is an excellent display of Hippeastrums in these gardens at the present time, consisting of 200 plants, most of which have two spikes with four, five, and in some cases six flowers on each spike. A similar number of well-grown plants of Cinerarias of a good strain are also in flower, and a large number of other miscellaneous spring-flowering plants. The Hippeastrums were all raised in these gardens several years ago from seed the result of cross-breeding from several plants originally obtained from R. P. Ker & Sons.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

VITALITY IN DAHLIA TUBERS.—In the early spring of 1904 we had occasion to pack an order for Dahlia pot-tubers, but received instructions to cancel the order before the goods were dispatched. The roots were left as packed in paper parcels, and the box lay undisturbed until a few days ago [twelve months afterwards], when most of the roots were found to be sound, many of them sprouted and are growing like the one which is now enclosed. It thus appears that Dahlia tubers can be kept alive for a long time under suitable conditions. *Dobbie & Co., Rothesay, March 29.*

POTATO PLANTING.—The method I adopt in planting Potatos is somewhat different to that described by Mr. Richard Parker on p. 201, and to that by Mr. Fyfe on p. 199. For the earliest crops of Potatos undoubtedly "sprouting" has its advantages as the tubers come to maturity sooner. Where the whole Potato crop is grown in the garden and a large quantity of seed Potatos is necessary, it would take a large number of trays and a considerable time to stand all the Potatos on end to sprout. I contend that equally good results are obtained without this trouble. In planting Potatos I use an iron-shod dibber with a cross-handle fixed at the top and an iron tread placed 10 inches from the bottom to allow of its being pressed into the soil by the foot; the tread also regulates the depth of the holes. The planter works a tightly-stretched line, being followed by another person who places the Potatos in the holes. The holes are not filled in with a rake, but with a two-tined "hoe." I find the use of the "dibber" is not detrimental to good cropping, nor is there irregularity in coming up if the work is done when the soil is in good condition. The thorough working of the soil is of much greater importance than are mere methods. *A. Jefferies, Moor Hall Gardens, Harlow, Essex.*

ACACIA DEALBATA. — Having grown and flowered this species in a cool but sunny conservatory, I may say that for several years I have commenced cutting well-developed sprays of blossoms early in January. If "J. N. H. B." intends planting this species, and has sufficient space at his disposal, he should make provision for a border of considerable size. Although growth is satisfactory in a limited root-run, there is the liability of the plant to cast the flower-buds during the autumn months, even if close attention be given to watering and feeding. *H.P., Bournemouth.*

CAMELLIAS.—A small display of choice varieties of Camellias was made at a recent meeting of the Royal Horticultural Society by Messrs. W. Paul & Son, Waltham Cross, which found many admirers among the visitors, to whom, owing to the partial disappearance of the Camellia from our gardens in the last thirty years, they appeared in the guise of veritable novelties. Of uncommon varieties mention may be made of Madame Strekeloff, a bloom of a pale rose tint with large petals regularly imbricated. It is of the same shade of colour as Pride of Waltham, but the petals are smaller and less reflexed. Duchess of York is a seedling raised at the Waltham Cross nursery. The colour is a deep shade of crimson. C. imbricata alba, Marchioness of Exeter, and many other old favourites were shown. *F. M.*

CRYPTOMERIA, ARAUCARIA, ETC.—Cryptomeria japonica grows, with many other fine specimen Conifers and ornamental trees, in the flower garden here. Its height is 55 feet, and the girth of the main trunk at 5 feet from the ground is 5 feet 11½ inches. The tree has three other limbs, which come from the main trunk near the ground-line; they are procumbent for about 7 or 8 feet, and then rise spirally, one to the height of 28 feet, one to 27 feet, and one to 18 feet. The largest limb has a girth of 2 feet 8 inches at 5 feet from the main stem; the diameter of the branches at the ground-level is 33 feet. Abies nobilis glauca, near by, has a height of over 52 feet and a girth at 5 feet from the ground of 6 feet 11 inches. Two specimens of Araucaria imbricata, one male and the other female, grow in close proximity to the Cryptomeria. The female specimen is 48 feet high, with a girth of 6 feet 11 inches, and the male specimen is slightly less in girth but about the same height. Two finer specimens of Araucaria that grew near by were completely overturned in a great gale that raged here in November, 1901. At that time, also in the same flower garden, a specimen of Cedrus Deodara, over 50 feet high and of large girth, was destroyed. In this garden is a specimen of Robinia pseud-Acacia over 50 feet high and having a girth of 6 feet 9 inches. *F. Street, Ardwell Gardens, Wigtownshire.*

CUPRESSUS TORULOSA AND THE CEDAR OF GOA.—At page 275 of the *Gardeners' Chronicle* for October 15 last, you kindly inserted a paragraph above my name regarding the difficulty of separating Cupressus torulosa and C. lusitanica in their cultivated forms. To this paragraph an editorial note was added, "C. torulosa is not known in China or near Goa." The purport of this note is not clear. If taken literally it is inaccurate, since C. torulosa, though indigenous to the Himalayas, is widely cultivated in India even on the plains, and would succeed well on the ghauts above Goa. J. S. Gamble, in his classical *Indian Timbers*, states—"It (C. torulosa) grows well and fast at Dehra Dun, Saharanpur, Chikalda, in Berar, and even Calcutta." I can remember its growing in Southern India. There were specimens which grew with particular vigour on the Nilgiris. Then as regards China, in *A General View of the Genus Cupressus*, by Dr. Maxwell T. Masters, we read under C. torulosa var. Corneyana, "E. China vel e Japonia ut existimant auctores allata, specimina indigena hucusque tamen haud offensa," which may be translated "Introduced from China and from Japan as authors believe; indigenous specimens of this (variety) not yet met with." The forest country of the inaccessible mountainous regions of China has been so little explored by Europeans that it is not surprising that indigenous specimens of Cupressus torulosa have not yet come to hand. But it would be somewhat surprising to find that C. torulosa stopped short at the Himalayas while so many other Himalayan trees extend eastwards across the Shan states of Burmah and the mountainous forest country of Yunnan. I am inclined to think that C. sinensis originally came from China, and C. lusitanica from Goa, and that they are both the cultivated forms of Cupressus torulosa. *E. Hutching, Conservator of Forests, Cape Town.* [Of course wild specimens were intended, not such as are cultivated. Our enquiries from Indian botanists and foresters as to the existence of any wild Cypress near Goa have been fruitless. ED.]

THE CUCUMBER "SPOT."—My object in drawing attention to the ravages committed among Cucumber crops, and the consequent serious loss to growers by this mysterious disease, was that some means for its prevention or extirpation might be found. To some extent that object has been attained, Mr. Ward having contributed some useful suggestions with respect to the probable cause of its visitation, and some practical hints as to how its progress may be arrested. I would not again have occupied your space on this subject were it not for the purpose of clearing up one or two points in my previous letters which seem to have been misunderstood. Mr. Ward gives it as his opinion that the cause of spot appearing on Cucumbers is not to be attributed to the composition and condition of the soil in which the plants are growing under expert management. In my first letter I stated my conviction—a conviction arrived at from recent evidence, which I will not repeat—that the soil in which the plants are grown is not the cause of the disease appearing, therefore we are agreed on this point, as far as practical experience carries us; but this is not to say that science, after all, may not prove by demonstration that a certain chemical treatment of the soil may effect a prevention of the disease. The most likely cause, in Mr. Ward's opinion, for the attack of the disease is to be found in the weak and worn-out condition of the plants after a period of heavy and continuous fruiting, inviting an attack in their more or less enfeebled state. This, I think, is a natural and sound conclusion in relation to the time that plants generally are the most prone to attacks of disease, such as mildew or infestation from insect pests. To my mind, I thought I had proved in my previous letter that this at least was not the only reason likely to cause the disease, because I stated that quite young plants having only three or four leaves, growing in good heat and well isolated from any affected plants, were infested in a garden which I visited last year, and I now hear that the pest has already made its appearance in some gardens at this early date. This, to some extent at least, proves that the cause of the disease is not entirely to be attributed to the proposition Mr. Ward advances. With respect to a preventive or a possible cure, Mr. Ward advises the frequent application of sulphur vapour. No one appreciates better than I do the value of this mode of applying sulphur for the destruction of fungoid diseases, but the recommendation of its application must be qualified by the fact that it cannot be applied without leaving a decided residue behind it on the foliage or fruit it may come in contact with, coating all surfaces with a sort of silvery enamel, which after it sets is difficult to remove without injury to the fruit. For Roses under glass affected with mildew after their season of flowering is over, or for fruit-trees, especially Vines, after the crops are gathered, this is certainly one of the best known remedies, but I venture to say that practitioners generally would hesitate long before applying it to Vines or any other fruit-trees in bearing, or even Cucumbers. Mr. Ward is on firmer ground when he suggests that a contributing cause is to be found in the danger of producing a chill in the plants by the discontinuance of fire-heat at night too soon—say the middle to the end of June. I am quite of his opinion here, and would strongly advocate the continuance of a little fire-heat at night well into the middle of July as calculated to stave off the disease more than anything else. Many growers will be much interested in the statement which appeared in the *Gardeners' Chronicle* of the 25th ult., that [it was reported that] a means had been found for its prevention and cure, and that £1,000 is claimed for the divulgation of the secret. The knowledge if made general would no doubt be cheap at the price, and the wonder is that the fortunate discoverer does not secure his discovery by letters patent, which should be worth much more to him than the price mentioned if the remedy, after independent and searching trial by competent men, proved effective under all conditions. *Owen Thomas.*

SENTIMENT *v.* PROFIT.—I do not often trespass on your space, but I should like to say a few words anent Mr. Douglas's remarks on p. 65 on sunny walls. There is no doubt we shall have to study economics more. It is painful to witness the indifference the average cottager has to anything in the way of progress, even if it would add to his own pleasure and profit. A few years ago I came across a Vine-clad cottage, and as everything seemed favourable for an experiment, the growth of the Vine strong and vigorous, the atmosphere clear, soil and aspect good, with protection from marauders, I got into conversation with the owner (a man of the labouring class), and pointed out to him the possibility of obtaining a crop of fruit next year, and volunteered my services to come at intervals through the season and do what was necessary to attain that object, but as soon as I mentioned that it would mean keeping the laterals short, he scoffed at the idea and said, "Na, na, that woona do; it's a creeper, and meant to hang doon." I immediately transferred the conversation to the village cricket match on the previous day, and found an agreeable companion. *Charles Salvidge.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

MARCH 28.—*Present.*—Dr. M. T. Masters, F.R.S. (in the chair): Prof. Percival; Messrs. Michael, Bowles, Shea, Odell, Güssow, Baker, Druery, Worsley, Hennessey, Saunders, Nicholson, Gordon, Holmes, Bateson, Douglas, and Chittenden (Hon. Sec.). Visitors: Messrs. L. Sutton, A. Dean, and Foster.

Diseased Amaryllis bulbs.—The bulbs sent to the last meeting by Mr. C. E. BAXTER, F.R.H.S., had unhealthy roots marked at their base by a deep red colour, which penetrated right through the root; the red colour in places stained the outer scales of the bulb, and was visible also on the tips of the young leaves, which were hardly an inch in length. Mr. Saunders reported that no mites or other living creatures were present on or in the bulbs. Dr. Cooke wrote: "The dark blotch was caused by a fungus, Botrytis cinerea, apparently the same as described by Prof. Marshall Ward on the Lily. The bulb has been kept in a damp atmosphere for ten days, and has now a fine crop of the mould. Nothing can save a bulb when once attacked.

Galls on Spruce Fir.—Mr. SAUNDERS reported as follows upon these sent to the last meeting:—"The shoots had been attacked by one of the aphides, Chermes abietis. The female lays her eggs in spring at the base of the buds, which she punctures with her proboscis and feeds on the juices; the young Chermes which are hatched from these eggs feed in the same manner. The continued puncturing of the bud causes the leaves to grow in a quite abnormal manner, the result of which is a gall which very much resembles a small Fir-cone. The young insects are gradually quite enclosed in the chambers of the gall. Eventually the chambers open, and the Chermes, which have by this time become winged, fly away. Though this insect is so common, its life-history has not yet been completely made out. In the early summer these galls should be cut off and burnt, so as to destroy them before their tenants escape."

Diseased Spanish Iris.—Plants of several varieties of Spanish Iris were sent to the last meeting, with the note that some had failed to start; some had germinated and grown to some extent, but had then gone off. Dr. COOKE examined them and reported: "After being kept in a damp atmosphere for nearly a fortnight the bulbs exhibit no fungus pest. The bulbs are rotting, and with plenty of the bulb-mite in them, to which their failure must be due." Mr. MASSEE also writes: "I can find nothing else for it but to attribute the injury to the bulb-mite."

Diseased Richardia.—Mr. W. G. SOPER, F.R.H.S., sent some diseased Richardias. The plants grown in his garden had suffered more or less for five years, and dusting the corms with flowers-of-sulphur and soaking them in Bordeaux-mixture had had no effect on the disease. Mr. Odell will report upon them at the next meeting.

Pear Twigs Diseased.—These from the National Fruit Growers' Federation exhibited the well-known signs of canker.

Crinum Rattrayi.—Mr. WORSLEY drew attention to the plant shown at the show to-day, and stated that it varied very little from Crinum giganteum. Mr. Nicholson said he had no doubt it was a form of that plant.

Degeneration of Varieties Propagated by Buds.—A discussion on this subject then ensued, opened by a few introductory remarks by Dr. MASTERS (see *Gardeners' Chronicle*, April 1, 1905, p. 200).

Mr. A. DEAN then read a short paper on the subject of deterioration, with special reference to the Potato:—

"DO POTATO STOCKS DETERIORATE?

In dealing with the assumed deterioration of the Potato, it is needful to be clear that not Potatos as edible products are referred to, but as varieties of a species. The assumption is that varieties have lives comparatively short, as compared with other kinds of vegetables. That assumption is by no means proved. One probable cause for the comparatively rapid disappearance of Potato varieties from cultivation is found in the freedom with which new ones are raised, and the taste for novelties is as great amongst Potato-growers as among any class of persons. That readiness for change is based on a belief that new ones may always be better than older ones. Curiosity to find what may be the characteristics of new varieties is also a prominent factor in the matter. Then it is again a tradition of the Potato trade that varieties wear out, and should often be replaced by newer ones. The trade would no doubt feel hurt were it to be said that such tradition is based on trading interests. In any case it does as a theory without doubt lead to much business.

Now if we turn to some varieties of Potatos long in cultivation, we find that in their cases wearing out is not so evident. There is the Ashleaf Kidney, in cultivation from almost time immemorial, and chiefly recruited from year to year either by selecting tubers for planting from the best plants, or by effecting frequent changes of seed-tubers. The American Beauty of Hebron has been here some thirty years, and seems to be as useful and good cropping a variety as ever. Magnum Bonum has been with us thirty years, and still it is found that tubers from stocks grown in Denmark give as full crops here now as ever the variety did. International Kidney is still found in all parts of the kingdom, giving as fine crops of tubers as ever, and it is grown in the Channel Islands and in France in enormous quantities for the supply of the British markets. Given varieties that newer ones have failed to displace, and there seems to be no lack of endurance in them—tuberous Artichokes in point.

But assuming that the theory of the deterioration of varieties is correct, what may be the predisposing causes to that decay? First, is it not possible that our practice of wintering tubers for future planting in dry places and exposed to air may have a weakening effect? Does Nature require that to be properly progenitive the tuber should remain in the soil all the winter, but preserved from frost. I do not advance this as an absolute necessity; I merely put it forward as a possible cause for the assumed deterioration.

Then we do as a rule — and it is noteworthy that the old Ashleaf Kidney is usually made an exception to the rule — plant small rather than large tubers annually for crop production. In the case of other vegetables, do we not select the very finest roots or plants to produce the seed for the ensuing crops? In everything we grow in gardens or fields it is the rule to select for parentage the finest and best. This is not so with the Potato, and if in its case we depart, as we so commonly do, from an acknowledged rule, what other result can be looked for but that gradual weakening or deterioration of stock must ensue? Conversing recently with an old Scotch Potato grower on the cause of the fine productiveness of Scotch tubers, he said that, apart from Scotch soil and climate, two important factors in that strength or fertility, it was largely the practice to plant large tubers, even though often cut prior to the planting. On that point it may be possible to get further information. Undoubtedly a common cause for real weakness in Potato stocks is found in the storing tubers for planting in pits, tiers, or heaps, in which they sweat or heat, thus speedily causing premature sprouting. That is especially an evil practice in the southern districts, because Potatos ripen early, and as a consequence push growth early. That the result is of the most weakening effect has been demonstrated over and over again. Whilst our crops southwards are ripe often from six to eight weeks earlier than are those in the North, we cannot, because of the prevalence of spring frosts, safely plant much earlier than in the North.

Three hundred years of European cultivation have left the Potato plant as tender as ever it was, and but one sharp spring frost on the plants may kill them to the ground. All good growers hold that boxing seed tubers and wintering in cool sheds away from frost, and where comparative rest is secured, is invariably followed by finer crops than result from tubers that have been pitted and prematurely sprouted, the blanched sprouts being removed. Is it wise to have Potato breadths moulded up, as is commonly done? That it is done chiefly to keep tubers from exposure to sight and air is the case, but it still remains a question how far the practice may be detrimental to plant robustness. The method of propagating Potatos by means of sprouts or cuttings taken from tubers forced into premature growth in warmth under glass, not at all a new practice, but one much revived last year, has led to the declaration that it means ruin to the constitution of the Potato. Absolute proof that such would be the result has not been furnished, and although it may be out of place further to refer to the practice here, yet before such doctrine is accepted more experience must be obtained than now exists. To that end it would be well could a series of experiments be conducted at Wisley on such lines—plants obtained from sprout-cuttings raised and planted out beside others of the same variety raised from ordinarily planted tubers, the progeny in each case being grown on also side by side for three or four years. Also experiments might be conducted to show the effects of whole large tubers and cut large tubers against those of the customary round tubers that are generally planted, so as to ascertain which progeny would, after some three or four years, the soonest deteriorate. The effects of earthing-up and non-earthing could be tried, also the effects of change of seed from various soils and climates as compared with similar varieties home-grown. These and many other allied experiments might well be conducted at Wisley by a special Potato Committee.

Effect of Soils.—Whatever may be the effects of different soils on Potato-plant growth, it is certain that they do produce very markedly diverse effects on Potato quality in an edible sense. How far deficiency of starch in a tuber may affect its productive capacity when planted as compared with the same capacity of a tuber of similar size that is thoroughly starchy, is a matter which experiment and observation alone can show. It is instructive to find that of the same varieties grown on diverse soils or in diverse localities, that whilst some are really good in an edible sense, cooking dry, mealy, and starchy, from other soils the tubers are watery, close, tasteless, and altogether worthless as food. If such be the effect of soils on tubers, may it not be probable that weakening effects would follow in the plant growth? Here it is evident the analytical chemist is needed to show in what elements the tubers and the soil may be deficient, and what manures are needed to provide them."

Professor PERCIVAL said the matter was obviously one of fact, and what was wanted was more evidence. He doubted whether any of those present had lived long enough to settle such a question, especially in the case of long-lived plants such as Vines. The idea of deterioration was no doubt widely spread. When they heard, as in the case of the Potato, that certain varieties had been in cultivation for a long time, it did not touch the point. A large number of varieties might have gone very much more quickly than others which may have had more vitality. Certain it was that some varieties had disappeared, but why was not quite clear. There was evidence that they got weaker and weaker, and that was why they had been discarded for their poorness. A hundred years ago—in fact, in the middle of the 18th century—there was evidence of very great difficulty in rearing Potatos, which in many cases refused to come aboveground. Some such effect was noticed nowadays by growers, and it was no doubt due to a weakening cause. If that were the case, he personally thought it strongly favoured the disappearance of the varieties vegetatively reproduced. To ask why was like asking why old age occurred. We did not know what old age was. Human beings did not live for ever—nor did trees. There seemed to be a distinct life-period for all these things, after which they died down from want of vitality. Everything underwent repair, and he believed the repair was not perfect, and that the life-machinery gradually weakened and vitality was lost. The question would only be settled, if at all, by experiments.

Mr. ODELL stated that, after many years of experiments, he had found that Magnum Bonum grown for four years running on a heavy clay loam in Middlesex were completely worn out, and in two years the produce was reduced by 50 per cent.

Dr. MASTERS: How would it have been on another field?

Mr. ODELL said he could not answer that question. In the case he mentioned it was the same soil, but not the same plot.

Mr. DRUERY: Would that not imply that the soil was not suitable for Potatos, and that would be begging the whole question?

Mr. WORSLEY said he got some advertised disease-proof Potatos, but at the end of eight years all the Potatos had got disease.

Mr. DOUGLAS recalled how in his young days they had two beautifully flavoured Potatos, Buffs and Dons, but in 1845 they were practically exterminated. The people then took to the white Potato, but they were nothing like the others in quality. It was about that time that guano was introduced, and many farmers thought that was the cause of the disease. He did not know whether there was any truth in that, but he had come to the conclusion that artificial manures favoured the production of disease. In Essex they had Potatos for many years, but the tubers deteriorated. They used to grow 100 acres of Potatos, and it paid to send to Scotland for the seed. He could only grow "Up-to-Date" Potatos now, and after three years it did not pay to grow them. Owing to weakness many of the Potatos never ripened, and degeneration soon followed. He could not say what was the cause of the degeneration, unless it were artificial manures.

Mr. FOSTER was of opinion that there was no doubt that Potatos did deteriorate after they had been grown in the same soil for a number of years. He exhibited largely some years ago, and he found that he could get much better crops from seed planted late than from tubers planted in the usual way in the spring.

Mr. GORDON remarked the point for them to consider was how to prevent this degeneration. He thought the case of the Potato was wholly different from that of fruit-trees, because so far as he knew no varieties of Apples, Pears, or Plums had degenerated, although they were reproduced vegetatively by grafting. When he was a boy the Ribston Pippin was supposed to be dying out, but now they could see thousands of trees in the country in the most healthy condition, and bearing excellent crops of fruit. They ought to remember that the Potato was an exotic, and was grown in this country under conditions very different from those in its native home, and that was a point to which they should, he thought, pay special attention. Then they ought to consider whether their methods of procedure did not contribute to the degeneration. In his early days they used to cultivate the old Fluke, which was supposed to be dying out, but they used to grow some tons per acre more than their neighbours. Their practice was, instead of keeping the Potatos close in clamps until the time for planting, to spread the tubers in cool sheds protected from frosts. Consequently they did not make long growths, which had to be removed, and the tubers were not exhausted to the same extent. They were thus able to grow the Potatos of that particular variety long after the other growers in the district were able to do so at anything like a profit. There was, therefore, a great deal in their methods. The same could be said of Chrysanthemums. These had been grown for a large number of years, and the plants retained their original vigour until there was a great demand for blooms of the very biggest possible size. Then the forcing system of cultivation was adopted. This brought about weakness of the plant and the particular varieties died out in a very few years. As to the Potato, if they adopted a different method in selecting and saving the seed-tubers, they might be able to retain the vigour of the varieties longer than was the case at present.

Mr. SHEA stated that Mr. Gordon had anticipated much that he would have said. They were undoubtedly dealing with an exotic which could not under the best conditions live its perfectly ideal life. Therefore the Potato was in a measure slightly on the down-grade. It was not, however, to be assumed that the Potato was rapidly disappearing for good. It seemed that Scotland had conditions which could maintain a particular variety in better health than could be done in the South. There was great deterioration in all Potatos, due to climatic alteration. It might be extremely slow, but it would be quicker where the soil did not suit it. They could not expect otherwise when their methods produced artificial causes of deterioration which were not inherent in the Potato. They aggravated any inherent weakness there might be by transplanting the plant to strange conditions; and then they found that when new varieties were excessively "boomed" it led to their being introduced to places which were not fit for them, thus leading to the idea that there was deterioration.

Mr. BAKER said he had done very well with Potato seed which he got from Scotland, but the second year's crop was best. After the second year, however, rapid deterioration set in. He had found that if the Scotch seeds were put in thoroughly worked soil with plenty of minerals, but which was deficient in nitrates, he got a good crop. He had planted "Snowdrops" on poor soil in which nitrogen was very deficient, and they had never yet fallen victims to disease. Under these conditions he had obtained better crops than from Potatos grown in richer soils. That was also true of the Chrysanthemum, or any plant. In the case of the Apple, which was not forced to the extent that vegetables were, they did not get deterioration of varieties. That was why the Strawberry did not deteriorate to the same extent as the Potato. The reason was that the grower realised that he must have abundance of minerals and not too rich soil. In other words, he believed that abundance of nitrogenous plant-food caused rapid deterioration, by altering the cell-structure.

Mr. Dean, supplementing his paper, said deterioration resulted from planting small tubers. Large tubers should be planted, as that, he believed, was one of the primary causes of the Scotch seed giving such good results.

Mr. Worsley added that when he said he had produced Potatos on land for eight years he should have stated that he selected large tubers. That was no doubt the reason why he succeeded in growing them well for eight years.

Mr. Chittenden said it was the common practice in Essex to get seed from Scotland. He had been informed that it was necessary to change from one district to another. It was not necessary to make a big change in the climate, though that would probably follow there, he thought, from the "lay" of the land.

Several letters on the subject will be published in our next issue.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

March 16.—There was a fine display of plants at the meeting held on this date. A large number of groups were shown, and the principal awards were as follows:—

A Silver-gilt Medal to Messrs. Cypher & Sons for a very fine group of plants, in which good Dendrobiums were prominent.

Messrs. Charlesworth & Co., Bradford, were awarded a Silver Medal for a choice group of hybrids.

M. Vuylsteke, Ghent, was awarded a Silver Medal for Odontoglossums.

Dr. Roberts, Altrincham, made a good display of Dendrobiums, and was awarded a Silver Medal.

A. Warburton, Esq., Haslingden, was voted a Bronze Medal for a group of plants.

Votes of Thanks were passed to Messrs. Wrigley, Sander, Leemann, Keeling, Mitchell, and Stanley & Co., for groups.

First-class Certificates

were awarded to the following plants:—

Odontoglossum × Rolfeæ var. meleagris (W. Thompson, Esq., Stone).

Brasso-Cattleya × Digbyano-Trianæ Heaton var. (Charlesworth & Co.).

Odontoglossum × amabile, O. crispum × O. × crispo-Harryanum (Charlesworth & Co.).

Lælio-Cattleya × luminosa var. Aurora (J. Leeman, Esq.).

Odontoglossum × Lawrenceanum (M. Ch. Vuylsteke).

Awards of Merit.

Odontoglossum × percultum (M. Ch. Vuylsteke).

Cattleya Mendeli var. Diana (Stanley & Co.).

Cypripedium × pulchrum (Stanley & Co.).

Odontoglossum × ardentissimum West Point var. (S. Gratrix, Esq.).

Dendrobium macrophyllum var. album (Dr. Hodgkinson).

At a meeting held on March 30 the following Awards were made:—

First-class Certificates.

Dendrobium × "Queen Alexandra" (S. Gratrix, Esq.).

Odontoglossum crispum "Oakdene Surprise" (E. Rogerson, Esq.).

Odontoglossum × Wilckeanum var. princeps (Charlesworth & Co.).

Award of Merit.

Odontoglossum × Lairessei (Charlesworth & Co.).

Odontoglossum crispum var. Mabel Whateley (Charlesworth & Co.).

Odontoglossum crispum var. "Clio" (W. Thompson, Esq.).

Odontoglossum × Waltonense (W. Thompson, Esq.).

Silver Medals.

Messrs. Charlesworth & Co., and to W. Thompson, Esq., for groups.

Votes of Thanks.

O. O. Wrigley, Esq., for a fine group of Lælia Jongheana, and to Messrs. Sander, Schofield, Low, Cypher, and Keeling, for meritorious groups.

Cultural Certificate.

Mr. S. Allen, for some well-grown plants of Dendrobium nobile. *P. W.*

HORTICULTURAL CLUB.

Forests, Natural and Artificial.

On March 28 the members of the Horticultural Club were treated to an interesting lecture by Dr. Augustine Henry upon the subject, "Forests, Wild and Cultivated" Mr. Harry J. Veitch presided, and the attendance, which was much larger than usual, included Sir Herbert Maxwell, Bt., and other visitors.

The lecture consisted in a large measure of explanations of a number of excellent lantern views, obtained from wild and cultivated forests, and their bearing upon the question of economic forestry. In presenting the first view, which consisted of an imaginary map in which the earth's surface was divided into the three colours, blue, green, and yellow, Dr. Henry said that the blue represented the forest area, the green the grass area, and the yellow the desert. This was shown probably in order to introduce the question of rainfall, to which Dr. Henry referred several times, and in connection with which he insisted that areas of grass land or forest were determined not so much by heat or cold, or by the nature of the soil, as by the amount of rainfall. In all natural forest regions there was a very heavy rainfall, and where it was greatest, said Dr. Henry, the forest trees grew to the extreme height of which they are capable, and evidenced the greatest luxuriance. The differences in the aspect of tropical forests compared with forests in a temperate zone were not only described but graphically illustrated by a magnificent view of a tropical forest. The great roots frequently possessed by tropical trees were illustrated by a view of the immense Ficus growing at the entrance to the Peradeniya Botanical Garden, Ceylon; and the freely branching habit of tropical deciduous trees by a view of a specimen of Bombax growing in Southern China. Temperate-zone trees, like Sycamores, Elms, and Birches, afterwards shown on the screen, afforded a great contrast in the comparatively few branches they possessed.

Passing to the question of shade-bearing trees, a Ficus was shown growing in Yunnan, in which scores of lower branches were heavily shaded by others almost of the same length, upon the same tree, but all remained in a perfectly healthy condition. Of our own trees, it was pointed out that whilst Beech will bear shade, Birch will not do so, and the Lombardy Poplar is so impatient of shade that it is impossible to form a screen with trees of this species, owing to the slight amount of shade that results from the trees being placed in line adjacent to each other. This quality in trees has an important bearing in the planting of forests and of trees generally.

Dr. Henry, then referring to the subject of soil, said that whilst the amount of rainfall decided the question of forests or no forests, the nature of the soil usually determined the kind of tree. Ash or Sycamore required good soil, but Pines, Oak, and Beech, were far less exacting. Birch was described as the one deciduous tree that takes possession of almost "absolutely barren" soil. Pictures were then shown of the remarkable Arbutus forests in Killarney, where the Arbutus form trees of considerable height, though but an under-shrub in France and in the Mediterranean region generally. Reference was made to Alders in Co. Wicklow, and, passing, Dr. Henry reminded his hearers that it was very unsafe to conclude that because a tree was found growing under certain conditions of climate and soil in nature that those conditions were the best possible for that particular species. It was quite possible the tree was there because it could not hold its own amongst other species in better situations. A Silver Fir Dr. Henry recently measured in this country is 145 feet high, Quercus Ilex in Co. Wicklow was 90 feet high, being taller than any known tree of this species in the world; Q. Toza in Co. Wicklow also was taller than the same species in France and Italy. These instances went to show the favourable character of portions of the British Isles for tree growth. A tree of Pinus insignis planted 43 years or so ago is now 98 feet high and has a girth of 6 feet. A Hornbeam in Co. Wicklow is bigger than any specimen of the species recorded elsewhere.

In a natural forest or a properly managed cultivated forest the soil improves year after year; it is enriched by the boughs and leaves that fall from the trees, and which conserve the moisture in the soil, whilst the timber which is taken away from the forest consists of little but carbon, and this is derived largely from the atmosphere. But in order to preserve these conditions, it was necessary that the trees be planted so densely and over such an area that the sun and wind will not affect the soil or accumulated humus. The value of close planting in the production of timber was illustrated by a number of views, one of which showed trees of Scots Fir, which having been planted closely had made straight, long stems, and, casting the branches early, the wounds soon healed over and left but small knots; whilst trees growing at greater distances, by retaining the branches for a longer time, contained such knots that reduced very considerably the value of the timber.

A forest Oak shown on the screen, that measured 90 feet to the first branch, and was 125 feet in height, was a striking testimony to the value of close planting.

Dr. Henry had much to say in praise of French forestry, and many of the slides represented scenes in the forests there. Special reference was made to the forest belonging to the hospitals of Nancy, located at an elevation of 3,000 feet, where the soil is mostly silica and the climate quite ordinary; and Dr. Henry explained that in France the theory was "A forest once, a forest for ever." This led to a description of how the French forests are regenerated without any planting being done. "Natural regeneration," briefly stated, is as follows: The timber trees, when ready for felling, are cut down at different times. First, there are removed as many as may be necessary to allow sufficient sunlight into portions of the forest to cause seedlings to grow, then another season more are felled to allow of the young plants making growth. Finally, all the trees are removed from that particular part of the forest, and it will afterwards assume what is known as the "bush" stage. The foresters then cut out the weeds and undesirable bushes to let the better trees make quick growth, and subsequently after several seasons' growth the 2,000 or so trees there may be to the acre are thinned to perhaps 200 per acre. The thinning is a work of some importance, as the principle of selection has to be applied in each case, so that the species required be kept, and the most promising trees of that species.

Dr. Henry severely criticised the attempts at forestry that have been made in this country, and anathematised the picturesque old Oaks that are prominent features in many of the private parks.

Then followed arguments in favour of the afforestation of waste lands—a matter which, said Dr. Henry, had been regarded as important in every country of Europe, except in England—and Turkey! In spite of the opinion of German foresters that the peat-bog is not reclaimable, Dr. Henry maintained that it is, and related in favour of the contention instances of trees now growing in such places. Among these were that of a Larch 114 feet high in peat moss at Bangor, and Alders 90 feet high in peat in Ireland.

In concluding his lecture Dr. Henry spoke of the different conditions in which Pinus montana was found, and their effect upon the tree's growth. In connection with this subject he said that this Pine and other forest trees in ascending mountain slopes were not stopped by cold as was generally supposed, but always by drought at the roots.

Referring to the artificial forests in France, he said that if it was possible for some one in the planet Mars to look upon the surface of the earth, these forests were the only work of man he would see that is of consideration.

Sir Herbert Maxwell said that such forestry as Dr. Henry recommended was impossible in this country until rabbits, which, like some of the trees, are exotics in this country, are confined into warrens. He did not think we could get much guidance from the State in the matter of forestry, for he found that in the *Returns of His Majesty's Woods and Forests for* 1903—1904, the expenditure was given as £52,000 and the receipts as £28,000 only.

Mr. A. H. Pearson, having raised the question of the difficulty experienced in effecting a sale of the timber when grown, Sir Herbert said that this might be merely a question of supply and demand. In all such matters the purchaser wanted a guarantee of uniform quality and of a regular supply. This the forester had never yet given. On his own estate some years ago it was with difficulty the thinnings could be sold locally for £135, but upon engaging a new forester, who was not satisfied with this price, and therefore advertised the thinnings, they sold for £450.

In reply to a question by Mr. R. C. Notcutt, Dr Henry said that although disease had been found upon the Japanese Larch, for practical purposes it could be regarded as immune in this country up to the present time. "It seems to be a better thing (than the common Larch) at the moment, but none can tell its future."

TORQUAY DISTRICT GARDENERS' ASSOCIATION.

March 30.—The above Association held a most successful spring show in the Bath Saloons, Torquay, on the above date. Quality was generally high, and the classes were, for the most part, well filled. The nurserymen who exhibited added much to the attractiveness of the exhibition by the fine collections of plants and flowers displayed by them.

Messrs. Barr & Sons showed a representative selection of Narcissi, among which were such varieties as Peter Barr, Dandy Dick, Concord, King Alfred, Constellation, Lucifer, Vesuvius, Constance, White Queen, White Lady, Bridal Veil, Salmonetta, Ariadne, Apricot, and others, also a collection of rock plants, as well as Anemones, Scillas, Muscaris, Chionodoxas, Fritillarias, Trilliums, and Tulipa Kolpakowskiana.

The Devon Rosery, Torquay, exhibited a quantity of cut Roses, pot Roses in flower, a brilliant bank of Anthuriums, Lily of the Valley, Staphylea colchica, Petræa volubilis, Boronia heterophylla, Tree Carnations, Lilacs, Ericas, and other plants; while from their Fruit Farm were contributed excellent Apples, Strawberries, Mushrooms, and salads, arranged with a wealth of Violets and Narcissi.

Messrs. Robert Veitch & Son, Exeter, staged

Primula kewensis, P. Isabellina, P. floribunda, Magnolia Kobus, M. Yulan, M. Alexandrina, M. Norberti, M. speciosa, M. Soulangeana, M. rustica, the new Erica Veitchi ×, the single white Camellia devoniensis, C. reticulata, Acacia armata, A. Riceana, A. hybrida, A. ovata, A. Drummondi, Grevillea rosmarinifolia, G. sulphurea, the new Cheiranthus kewensis, and numerous rock-plants.

Messrs. W. B. Smale & Son, Torquay, showed Cactus Pelargoniums, new hybrid Azaleas, Coleus thyrsoideus, Clivias, Cyclamen, Acalypha Sanderi, Tropæolum tricolorum, Hyacinths, Freesias, and Tulips.

Mr. J. Heath, Kingskerswell, was responsible for an exhaustive collection of all the best Violets, the white, blue-veined Princesse de Surmonte and the pink Perle Rose attracting considerable attention.

Messrs. W. H. Allward and H. Mayne, Torquay, staged miscellaneous plants.

The classes for bulbous and other flowering plants were well filled with high-class exhibits, and the competition for flowering and foliage table-plants was very keen. The Silver Cup for a group of miscellaneous plants was won by Miss Lavers with a fine group tastefully arranged with Caladiums, Palms, Pandanus, and other foliage plants.

The 1st prize for a group of Orchids 10 feet by 3 feet was won by Mrs. Trevor Barkly with an excellent collection; Miss Lavers taking 1st prize for three Orchids, one of the plants being a superb Cœlogyne cristata.

The 1st prize for three distinct flowering plants, won by Miss Congreve, brought out a magnificent balloon-trained Clerodendron Balfouri.

The Amaryllis class was good. 1st prize was won by Mrs. Trevor Barkly with fine hybrid Hippeastrums; and 2nd prize by Miss Lavers with the now seldom-seen Jacobea Lily, Sprekelia formosissima, in excellent form.

BRITISH GARDENERS' ASSOCIATION.

April 3.—The second committee meeting of the Birmingham and District branch was held on the above date, when a number of new members were elected, and a resolution adopted having reference to the number of enrolled members of a local branch necessary to ensure representation upon the Executive Council. *W. L. Deedman, Hon. Branch Secretary.*

GARDENERS' DEBATING SOCIETIES.

LEE, BLACKHEATH, LEWISHAM, AND WEST KENT HORTICULTURAL.—At a meeting of the above Society, held on Friday, March 31, Mr. Marlow, Superintendent Greenwich Park, gave a lecture on "Summer Bedding for Effect." The lecturer gave the members some useful hints as to effects, and the culture of various bedding plants. *H. T. H.*

REDHILL, REIGATE, AND DISTRICT GARDENERS'.—This Society held its fortnightly meeting on March 14, Mr. W. Seaman presiding. About eighty members were present to hear a paper by Mr. Black, of Streatham, on "Orchids and their Culture." Mr. Black said it was not necessary to give high prices for this particular class of plants, as many useful and beautiful Orchids could be procured for a reasonable sum. Referring to cross-breeding, Mr. Black strongly advised growers to refrain from crossing dark kinds with lighter varieties. Suitable times for repotting the plants and the best potting materials for the various species were given.

—— A meeting of the above Society was held on March 28, Mr. W. P. Bound occupying the chair. The lecturer for the evening was Mr. W. Seaman, of The Gardens, Margery Hall, whose subject was "The Cultivation of the Dahlia." Mr. Seaman referred to the introduction of the Dahlia into this country by Lady Bute in the seventeenth century. In dealing with the cultural side of the question, Mr. Seaman advised placing the old stools in moderate heat about the end of February to obtain a supply of cuttings. The first growths should be pinched out, for the later ones will be found to strike more readily. *Frederick C. Legge.*

NORTH FERRIBY AND DISTRICT GARDENERS'.—A meeting of the above Society was held on Wednesday, March 15, Mr. F. Reid presiding. Mr. G. Picker, The Gardens, Hesslewood, gave a paper on "Early Flowering Chrysanthemums for Open Borders." Mr. Picker dealt with the subject in a practical manner, giving chief points of culture, and a list of those varieties he considered most suitable for growing. The essayist exhibited some seedling Clivia flowers, and Mr. C. Jennings a display of spring flowers.

—— The members of the above Society held the last meeting for the season on Wednesday, March 29, Mr. F. Reid presiding. Mr. G. Cottam, Alma Gardens, Cottingham, gave an essay on "Hardy Perennials." The lecturer recommended planting these subjects in clumps, which gives a better effect than when they are planted as dot plants or in rows. He also stated the best season for propagating the different varieties. A discussion followed. It was decided to hold the General Meeting of the Society on April 26. Mr. F. Reid displayed an excellent dish of Canadian Wonder Kidney Beans.

KINGSTON GARDENERS'.—At the meeting of the above Society held on March 17, Mr. J. Smith, of Coombe Court Gardens, Kingston, gave a lecture on "Some Forcing Plants," dealing chiefly with the more valuable flowering shrubs. For earliest forcing a hot-bed is required in a shed or house; 6 inches of leaf-soil is laid on the bed, and the pots are plunged into the material until the buds start, which is in a fortnight. They are next placed in a house with a temperature of 50° for another fortnight, after which the temperature is raised to 60° until the flower-buds burst, when the plants are gradually hardened-off and placed in their flowering quarters. The plants should be pruned immediately flowering is over, and with generous treatment they may be flowered for three or four years in succession. Mr. Smith exhibited a collection of forced flowering shrubs. *J. T. B.*

LOUGHBOROUGH AND DISTRICT GARDENERS'.—At the recent fortnightly meeting at the Town Hall, Mr. J. H. Woolley, The Gardens, Leicester Frith, lectured on "Insect Pests." He referred to the life-history of many of the "aphides," and pointed out the distinction of the lower orders of pests from those of more active life, as centipedes, millipedes, and spiders. Leaves and their functions in the life of plants were fully explained, and it was shown how essential it was that these should be kept in a healthy condition and free from pests. By the aid of limelight views, manipulated by Mr. T. Simpson, the lecturer was able to give the complete life-history of a great variety of garden pests, including the green-fly, woolly-aphis, Gooseberry saw-fly, Cabbage-grub, Celery-fly, wire-worms, &c. At the conclusion the lecturer advised constant watchfulness to detect the early appearance of troublesome pests. Good and deep cultivation added much to the vigour of vegetation, and a healthy growth often escaped the ravages of garden pests.

CARDIFF GARDENERS'.—The annual meeting of this Society was held on Tuesday, March 21, at the Sandringham Hotel, Cardiff, when Mr. Tom Clarke presided over the largest meeting ever held in the annals of the Association. The balance-sheet showed a cash balance in favour of the Association. J. Lynn Thomas, Esq., C.B., F.R.C.S., J.P., was unanimously re-elected president, and the whole of the vice-presidents were re-elected (with two exceptions), and three additional names were added. Mr. Robert Mayne was elected chairman, with Mr. C. E. Collier vice-chairman. Mr. Thomas Malpass for the tenth successive time was re-elected hon. treasurer, while Mr. John Julian was unanimously re-elected hon. secretary. The committee was also elected.

BOURNEMOUTH AND DISTRICT GARDENERS'.—At a meeting of the above Society held on Tuesday, March 21, Mr. Dumper, of Hinton Admiral Gardens, Christchurch, read a paper on "Some Injurious Insects." Mr. J. B. Stevenson occupied the chair. The lecturer gave much useful information on the haunts and peculiarities of these garden foes, with hints on the methods of their extermination. Two gentlemen were elected honorary members of the Association at the meeting.

CROYDON AND DISTRICT HORTICULTURAL.—A prize essay by Mr. J. Sugden was read at the meeting held on Tuesday, March 21. The subject was "Birds of our Garden." The paper was suitably illustrated by the help of a magic-lantern. The exhibits were good, and comprised a pod of the Cotton plant, Cotton seed, and raw Cotton from Mr. F. W. Moore.

BRIXTON, STREATHAM, AND CLAPHAM HORTICULTURAL.—"How I Grow my Chrysanthemums," was the subject of the lecture at the meeting of the above Society on March 31, the lecturer being Mr. W. C. Jones, gardener to Mrs. H. S. Fitter, Okeburn, Streatham High Road. Mr. Jones gave many valuable and original hints in the details of stopping, manuring, &c. He emphasized the importance of having well-ripened wood. A discussion followed the reading of the paper, which was listened to by probably the largest gathering of gardeners ever held in Streatham. Mr. W. Roupell, Vice-President, who presided, made a special appeal to amateurs to join the Society, and said that the large audience present was an appreciation of the advantages offered by the Society.

BATH GARDENERS' SELF-HELP AND DEBATING.—A meeting of the above Society was held on March 27, Mr. T. Parrott presiding over a large attendance of members. There was a good display of plants, flowers, and vegetables at the meeting. Mr. Sparey read a practical paper on "The Culture of Vegetables," which was followed by an instructive discussion. Mr. Sparey exhibited a collection of nineteen varieties of vegetables. It was decided to accept an invitation from Messrs. Sutton & Sons to visit their nurseries at Reading in July next. *O. G. McLaren.*

DEVON AND EXETER GARDENERS'.—The subject under discussion at the closing meeting of the session was "Ornamental Shrubs and Flowering Trees for all Seasons of the Year," Mr. A. W. Luscombe, general foreman at Messrs. Robert Veitch & Son's nursery, Exeter, being the essayist. Mr. Luscombe gave an exhaustive address, illustrating his remarks by a miscellaneous collection of flowering sprays of shrubs, including the deciduous Japanese Magnolia Kobus. The lecturer recommended pruning such subjects as Lilacs, Robinias, Philadelphus, Magnolias, Escallonias, &c., in the resting period. Though peat was most helpful to Rhododendrons it was not absolutely essential, for a rich clay soil with an absence of lime and the addition of fibrous loam would also suit them. Amongst other shrubs Mr. Luscombe strongly recommended Spiræas, Andromedas, Ceanothus, Magnolia stellata, Cistus, Hypericums, Olearias, Weigelas, Brooms, Laburnums, Prunus (for foliage), Clerodendron, Veronicas, Acers, Arbutus, Catalpa, Liquidambar, Rhus Cotinus, the Cratægus family, Almond, and others. *A. H.*

CHESTER PAXTON.—The closing meeting of the present session was held in the Grosvenor Museum, on Saturday, March 18, when Mr. J. Thompson read a paper entitled "Local Fungi, when and where to be found." Mr. Thompson, who is an acknowledged authority on the fungi of the district, described the characteristics of the principal edible and poisonous species, and pointed out that, in addition to Mushrooms, many other species formed really delicious articles of food. An interesting discussion followed.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending April 1, 1905.

1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
	At 9 A.M.		Day.	Night.							
March 26 to April 1.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
Means	47	44	55	40	34	46	46	46	Tot 0·15	5	25

THE WEATHER IN WEST HERTS.

Over a Month of Warm Weather.—The present term of unseasonably warm weather has now lasted over a month. During the past week the highest reading in the thermometer screen was 59°, and on the one cold night the exposed thermometer registered 6° of frost. The ground, owing to the comparative coldness of the last two days, is not now quite as unseasonably warm as it was at the end of the previous week, but is still 2° warmer than the average, both at 1 and 2 feet deep. Rain fell on two days, but the amounts deposited were insignificant. So that the soil is gradually becoming drier, as is shown by the percolation gauges, through which no measurable quantity of rain-water has passed for ten days. The sun shone on an average for 4½ hours a day, which is about a quarter of an hour a day longer than is usual in the early part of April. Calms and light airs have again prevailed, and the direction of the wind has been again variable. The mean amount of moisture in the air at three o'clock in the afternoon exceeded a seasonable quantity by 1 per cent.

The first swallow of the season was seen on the Watercress-beds at Berkhamsted on March 28, or twelve days earlier than its average date in the previous fourteen years, and eighteen days earlier than last year.

MARCH.

Exceptionally Warm and Wet.—This was an exceptionally warm March. In fact, in the last nineteen years there have been only two other Marches with as high a mean temperature. With the exception of a few cold days at the beginning of the month, the weather remained moderately warm throughout. The highest day temperature, 60°, was nothing unusual, but it is very seldom in March, as was the case last month, that the thermometer exposed on the lawn does not show at some time more than 13° of frost. Rain fell on as many as twenty days, and to the aggregate depth of 3½ inches, which is 1½ inch in excess of the average for the last forty-nine years, and with three exceptions more than in any previous March during that period. Nearly the whole of the rainfall came through the 2½ feet of soil in the percolation gauges during the month. The sun shone on an average for four hours a day, or nearly half an hour a day longer than is usual. The strength of the wind was, as a rule, about average, and in no hour did the mean velocity exceed 21 miles, direction S.S.E. There were scarcely any easterly winds. Indeed, for only 110 hours, or less than five days, was the direction any point between North and East. The average amount of moisture in the air at 3 P.M. was about seasonable.

Our Underground Water Supply.

The winter half of the drainage year has now come to an end. The results are as follows. Owing to the heavy rainfall in March the deficiency is not quite so large as at the end of February. Nevertheless, taking the total fall of rain during the six months in question, there is a total deficiency of 4 inches, equivalent to a loss on each acre in this district of 91,170 gallons, or nearly nineteen gallons on each square yard of surface in my garden. *E. M., Berkhamsted, April 4, 1905.*

[*For actual temperature and condition of barometer at time of going to Press, see p.* 216.]

MARKETS.

COVENT GARDEN, *April* 5.

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.
Anemones, p. doz. bunches, pink	2 0–3 0
— fulgens ...	2 0–3 0
Carnations, per doz. bunches.	9 0–12 0
Fern, French (Asplenium adiantum nigrum), p. doz. bunches ...	6 0 —
Freesias, dz. bun.	2 0–4 0
Lilac, per bunch.	2 6–3 6

	s.d. s.d.
Marguerites, per doz. bunches.	2 0–3 0
Mimosa (Acacia), per bunch ...	1 0–1 6
Narcissus, per basket... ...	4 0–8 0
Ranunculus, per doz. bunches.	6 0–9 0
Violets, blue, per doz. bunches.	0 9 1 6
— Parma, per large bunch...	1 6–2 6

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6–0 9
— — medium, each ...	0 4–0 6
— — short sprays per bunch...	1 0–2 6
— Sprengeri ...	0 9–1 6
— tenuissimus..	0 6–0 9
Adiantum cuneatum, doz. bun.	6 0–9 0
Croton leaves, doz.	1 0–1 6
Cycas leaves, each	1 0–1 6
Fern, English, p. dozen bunches	3 0–4 0

	s.d. s.d.
Galax leaves (American), per dozen bunches.	1 6–2 0
Ivy-leaves, bronze	1 6–2 0
— long trails, per bundle ...	1 0–2 0
— short green, per dozen bunches ...	1 0–1 6
Myrtle, doz. bun.	3 0–4 0
Smilax, p. dozen trails	4 0–6 0
Hardy foliage (various), per dozen bunches	3 0–4 0

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Acacia armata, per doz.... ...	12 0–18 0
Aralia Sieboldi, doz.	4 0–6 0
Araucaria excelsa, per dozen ...	18 0–30 0
Aspidistras, green, per doz. ...	18 0–24 0
— variegated, per doz. ...	30 0–42 0
Azalea indica, p. doz.	15 0–30 0
— mollis, p. doz.	24 0–42 0
Asparagus plumosus nanus, per doz. ...	9 0–12 0
— Sprengeri, doz.	8 0–12 0
— tenuissimus per doz. ...	8 0–10 0
Begonia Gloire de Lorraine, doz.	12 0–18 0
Boronia megastigma, p. doz.	12 0–24 0
— heterophylla.	18 0–24 0
Calla æthiopica, per doz. ...	5 0–6 0
Cinerarias, per dozen	5 0–8 0
Crotons, per doz.	12 0–30 0
Cocos Weddelliana, per doz. ...	18 0–30 0
Cyclamen persicum, per doz.	7 0–15 0
Cyperus alternifolius, p. doz.	3 0–5 0
— laxus, p. doz.	3 0–4 0
Dracænas, p. doz.	9 0–24 0

	s. d. s. d.
Daffodils, various, per dozen ...	4 0–6 0
Deutzia gracilis, per dozen ...	6 0–8 0
Ericas, per doz....	15 0–24 0
Euonymus, dozen	4 0–9 0
Ferns, in thumbs, per 100... ...	8 0–12 0
— in 48's, p. doz.	4 0–10 0
— in 32's, p. doz.	9 0–18 0
Ficus elastica, p. doz.	9 0–12 0
— repens, per doz.	6 0–9 0
Genistas, per doz.	5 0–8 0
Hydrangea, Thos. Hogg, p. doz.	9 0–18 0
—Hortensia, doz.	12 0–24 0
Hyacinths (3 in a pot), per doz. ...	6 0–9 0
Kentia Belmoreana, per doz...	12 0–18 0
— Fosteriana, p. doz.	12 0–21 0
Latania borbonica, per doz. ...	9 0–15 0
Marguerites, doz.	6 0–9 0
Mignonette, per dozen	6 0–9 0
Pelargoniums, per doz., Show.	12 0–18 0
— Zonals, per dozen ...	6 0–8 0
Spiræa japonica, per doz. ...	6 0–9 0
Tulips, in boxes, per box ...	1 6–2 6

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.
Azalea Fielderi, per doz. bun..	2 6–3 0
— mollis, per dz. bunches ...	9 0–12 0
Calla æthiopica, per doz. blooms	2 0–3 0
Camellias, per dz. blooms	1 6–2 0
Carnations, p. dz. blooms, best American vars.	2 6–5 0
— smaller do. ...	1 0–2 0
— Malmaisons...	10 0–12 0
Cattleya, per doz. blooms	10 0–12 0
Cypripedium insigne, 12 blooms	2 6–3 6
Daffodils, per dz. bunch., single yellow ...	2 0–4 0
— double, do. ...	2 0–3 0
— Emperor ...	2 0–4 0
— Golden Spur	3 0–5 0
— Henry Irving	3 0–4 0
— bicolor... ..	2 0–4 0
— Sir Watkin ...	3 0–5 0
Dendrobium nobile, doz. blooms	1 6–2 0
— Wardianum ...	1 6–2 6
Eucharis grandiflora, doz. blms.	2 0–3 0
Euphorbia jacquiniæflora, bunch	1 6–2 6
Gardenias, per dz. blooms	1 0 2 0
Iris Germanica, p. bunch	1 0 —
— Spanish, bch.	1 0–1 6
Lilac (English forced), per bun.	2 0–3 0
Lilium auratum, per bunch ...	2 6–3 0
— lancifolium, rubrum and album... ...	2 6–3 6

	s.d. s.d.
Lilium longiflorum ...	3 0–5 0
— tigrinum ...	2 0–2 6
Lily of the Valley, per dozen bunches ...	6 0–10 0
Marguerites, per doz. bunches, white	3 0–4 0
— yellow... ...	3 0–5 0
Narcissus, p. doz. bunches, gloriosus	1 6–2 6
— paper-white	1 6–2 6
— Pheasant's Eye	1 0–2 0
— Jonquil ...	1 6–2 6
Odontoglossum crispum, pr. dz. blooms	2 0–3 0
Pelargoniums, p. doz. bnchs.	
— (Zonal) double scarlet ...	3 0–6 0
— salmon & pink	4 0–6 0
Roses, per dozen blooms, Niphetos, ...	1 0–2 6
— Bridesmaid...	3 0–5 0
— Kaiserin A. Victoria ...	5 0–6 0
— General Jacqueminot ...	1 0–2 0
— C. Mermet ...	3 0–4 0
— Liberty ...	3 0–5 0
— Mrs. J. Laing.	3 0–5 0
— Sunrise ...	1 6–2 6
Tuberoses, per dozen blooms	0 3–0 6
Tulips, doz. bun.	6 0–12 0
— special double varieties ...	18 0–24 0
Violets, blue, English, per dz. bunches... ...	1 0–4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	2 0–3 0
— Jerusalem, p. sieve	1 0 —
Asparagus, bunch	5 6–6 0
— Giant	7 0–20 0
— Paris Green...	4 6 —
— Spanish, bunch	1 4 —
— Sprue, p. doz.	10 0– —
Beans, dwf., p. lb.	0 10–1 0
— Madeira, per basket, broad	1 6 —
Beetroot, bushel	1 6 —
Broccoli, Sprouting, bag... ...	1 0–1 6
Cabbages, p. bag	1 0–1 6
— per dozen ...	0 6–1 0
Carrots, 12 bunch.	2 0 —
— new, bunch...	0 10 —
— bag	2 6–3 6
Cauliflowers, doz.	0 9–1 6
— Cherbourg dz.	0 9 —
Celery, doz. bnchs.	6 0–8 0
Cress, doz. pun.	0 9 —
Cucumbers, doz.	1 6–3 0
Endive, per doz.	1 0–2 0
Garlic, per lb. ...	0 3–0 4
Greens, bushel...	0 9–1 0
Horseradish, foreign, p. bunch	0 8–0 9
Mint, per dozen...	2 6–3 0
Leeks, doz. bndls.	1 6–2 0
Lettuces, Cabbage, per dozen ...	0 6–1 0

	s. d. s. d.
Mushrooms (house) per lb.... ...	0 9–0 10
Onions, pickling, per sieve ...	5 0–6 0
— Egyptian, cwt.	10 0–12 6
— English, cwt.	15 0 —
— Green, p. doz.	2 0–4 0
— Valencia, case	12 0–14 6
Parsley, 12 bunch.	1 6–2 0
Parsnips, per bag	3 0–4 6
Peas, French, pkt.	0 8 —
— Frame, per lb.	1 6–2 0
— Flats	5 6–10 0
Potatos, per ton	50 0–90 0
— Frame, lb. ...	0 3–0 5
— Teneriffe, cwt.	10 0–14 0
Radishes, 12 bnch.	0 6–1 0
Rhubarb, York, dz.	0 6–0 8
— Natural, doz.	1 6–2 0
Salad, small punnets, per doz	0 9 —
Seakale, per doz.	12 0–14 0
Shallots, p. sieve	8 0 —
Spinach, bush. ..	1 6–2 0
Tomatos, bundle	8 0–12 0
— English, p. lb.	1 0–1 6
Turnips per doz.	1 6–2 0
— per bag ...	1 6–2 0
— new, bunch...	0 10 —
Turnip-tops, bag	0 9 1 6
Vegetable Marrows, per doz. .	10 0–12 0
Watercress, per doz. bunches.	0 6 0 7

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, bushel ...	2 6–7 0
— English, per sieve or half bushel ...	1 6–3 0
— — per barrel.	8 0–21 0
— Victorian per case ...	8 0–18 0
Bananas, bunch .	7 0–12 0
— loose, dozen	1 0–1 6
Cranberries, box	13 0 —
Custard-Apples, per dozen ...	5 0–10 0
Figs, per dozen...	15 0–16 0
Grape-Fruit, per case	10 0–15 0

	s.d. s.d.
Grapes, Gros Colmar, per lb., A.... ...	3 0–4 0
— — B.... ...	1 6–2 9
— Alicante, p lb.	2 3–3 0
— Almeria, doz. lb.	5 0–8 0
Lemons, per case	8 0–18 0
Melons, each ...	2 6–5 0
Oranges, per case	5 0–8 0
— Blood	6 0 —
— Jaffa, per box	14 0–15 0
Pines, each ...	2 8–4 0
Strawberries, A., per lb.	5 0–6 0
— — B.. per lb....	2 0–3 0

REMARKS.—The Bermuda vegetables were a failure. Custard Apples, 5*s*. to 10*s*. per dozen. Cape fruit: Plums, 4*s*. to 7*s*. per case; Peaches, 6*s*. to 10*s*. ditto; Pears. 7*s*. to 10*s*. ditto; Grapes, 10*s*. to 15*s*. for large cases containing about 16 to 17 lbs.; smaller cases, containing about 10 lbs., 5*s*. to 6*s*. Cucumbers are more plentiful. Prices for Onions are much easier. Turnip and Swede tops, 1*s*. per bag. Good Cabbages are arriving. Prices all round are easier, and supplies are plentiful. English Apples: Wellingtons, 5*s*. to 7*s*. per bushel; Hanwell Souring, Norfolk Beefing, and French Crabs, 4*s*. to 5*s*. ditto; other varieties are to be had as low as 2*s*. 6*d*. per bushel. The Vegetable Marrows quoted above are forced.

POTATOS.

Dunbars, 80*s*. to 90*s*.; various, home-grown, 50*s*. to 80*s*. per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

The market is now open for the sale of plants during each day of the week. There is not much that is fresh among pot plants. Fairly good Pelargoniums, both Show and Regal, are arriving; these sell moderately well at from 12*s*. to 18*s*. per dozen. "Zonals" are now more plentiful, the variety F. V. Raspail realises from 6*s*. to 8*s*. per dozen. Various varieties in 60's, with one good truss of bloom, are in fair demand; these make from 1*s*. 9*d*. to 2*s*. 6*d*. per dozen. Good Crimson Rambler Roses are seen, also General Jacqueminot and other H.P.'s. The dwarf-growing variety, Madame N. Levavasseur, appears to be suitable for market purposes. Ericas are good; 3-yr.-old plants of E. Cavendishi, plentifully flowered, make from 3*s*. 6*d*. to 5*s*. each. E. coccinea minor, E. perspicua nana, and E. Wilmoreana are also seen. Boronias are still of good quality. Azaleas are not so plentiful, but there are more than required. Prices for Genistas are well maintained. Marguerites also sell at good prices. Spiræas vary much in quality and are over plentiful. Good Hyacinths and Tulips in pots are still seen, but another week will see the finish of these plants for the season. Mignonette is well grown. Cyclamen are still obtainable, also Hydrangeas both Hortensia and Thos. Hogg. Among Ferns, Palms, and other foliage plants there is little variation. Ferns sell more readily, especially among country trade. Temporary stands are now erected under the new French Market, and many are already occupied with hardy roots and bedding plants, Violas, Pansies, Daisies, Polyanthus, Primroses, &c. Many tender bedding plants in store boxes are sold: these include Geraniums, Fuchsias, Heliotropes, Petunias, Marguerites, Harrison's Musk, Asters, Stocks, Nicotiana, Lobelia, Marigolds in flower, and other similar subjects. There are many hardy shrubs, climbers, &c., also Roses from the open ground.

CUT FLOWERS.

Supplies continue excessive, and with the prevailing mild weather and Easter falling late it appears probable that much that usually comes in for that season will, when it arrives, be over. Daffodils from the open are now arriving from many parts. Supplies from the Scilly Islands are almost finished. Many are coming from Holland. Hyacinth bloom is also seen in large quantities. There are still many Tulips in the market. The ordinary "Dutch" will soon be finished, the "Darwins" succeeding them. Spanish Iris will in a few days make a great display. Supplies of Liliums are moderately plentiful. Callas have been a drug, but these may be scarce before Easter. Roses were never so abundant. It must be disappointing to growers, who find it is impossible to sell even the best flowers in sufficient quantities to clear out. At the close of the market this morning many remained unsold. Carnations continue over-plentiful. Orchid bloom is seen in large quantities, but the demand is very limited. Large branches of deciduous flowering shrubs are brought in. Cut foliage is plentiful. Galax leaves from America are now extensively used, especially those with a bronzy-red tint. *A. H., Covent Garden, April* 5.

ANSWERS TO CORRESPONDENTS.

BEGONIA GLOIRE DE LORRAINE: *J. F. S., Wolverhampton.* We believe that this popular winter-flowering Begonia was raised by MM. Lemoine & Son, Nancy, France, from a cross between B. Dregei and B. socotrana, the former a Cape species and the latter from Socotra.

BOOKS: *Constant Subscriber. The Book of the Peach,* by H. W. Ward. This may be obtained from our Publishing department, price 2*s*. 9*d*., post-free.

CANNAS AND BEGONIAS: *A. R. T.* Put these into boxes containing light soil with much leaf-mould, and they will commence to make growth. When you remove to the new house, the plants may be lifted very carefully and be planted in the ground. The leaf-mould is useful because it will adhere to the roots of the plants at time of moving. In the meanwhile retard the growth of the plants as much as possible by keeping them in cool conditions.

CATERPILLARS ON FRUIT TREES: *H. J. C.* The caterpillars are those of the Magpie or Currant Moth (Abraxas grossulariata). You cannot successfully treat the trees while they are in blossom, but you might lessen their numbers considerably by shaking the branches over a tarred tray. As soon as the bloom has set you may spray the trees with Paris-Green (POISON) at the rate of 1½ oz. to 20 gallons of water. Keep the water constantly stirred during the process of spraying, and if necessary make a second application about fourteen days afterwards. In winter unnail the trees and dress the wall thoroughly with paraffin, taking care to apply it to all the crevices and under the coping-stones, as it is in such places that the caterpillars hibernate; they may also be found among the branches hidden in bits of dead leaves and in the shreds, so that these will also need attention. As an extra precaution spray the trees next spring with Paris-Green just as the buds begin to open.

FERN: *A. H. Pearce.* Your Fern is Pteris biaurita. We know of several instances in which this has appeared among seedlings in places where it has not previously been grown.

FIGS: *J. J. G.* The tree is attacked by the fungus which is so detrimental to Figs, Cercospora Bolleana. Cut the diseased branches away and burn them. Dust the new growths with flowers-of-sulphur.

FUNGUS ON APPLE: *G. P.* The Apple is partially covered with the mycelium or vegetative portion of a fungus, probably one of the Agaricus species, of which the common Mushroom is a member. The fungus has not entered into the tissue of the Apple, and its presence is no doubt due to accidental circumstances.

GRAPES SPOTTED: *R. B.* Your berries are attacked by the spot fungus, Glœosporium læticolor. Burn all the diseased bunches, and spray the plants with liver-of-sulphur, in the proportion of ½ oz. of sulphur to 1 gallon of water.

GREVILLEA ROBUSTA: *R. H.* Plants may be raised readily from seeds sown in a slight hot-bed in spring, and this is the more general means of propagation. Cuttings from well-ripened wood, however, will make roots if inserted under a bell glass. Use plenty of sand in the compost. Treat the cuttings as you would those of greenhouse species of Cytisus. The diseased Pelargonium leaves are being investigated.

HYACINTH: *G. H. D.* Owing to some reason that could only be ascertained after examination of the soil and the conditions in which the plants have grown, most of the roots have died. At the same time the flower-spike appears to have been injured by insect bite, which would account for the sudden and absolute collapse. Examine the others for insect punctures.

INSECTS ON FERN ROOTS: *J. B.* The insects are a small species of coccid, closely allied to the mealy-bugs, known to scientists as Ripersia terrestris. In repotting the plants wash the roots thoroughly in clean water, and destroy any bugs that may float upon the surface. Bisulphide of carbon will destroy them, and to apply it make four holes close to the side of the pot with a 4-inch wire nail, and charge each hole with a small quantity of the fluid by means of a glass syringe, at the rate of about two teaspoonfuls to a 6-inch pot. Close the holes after the application has been made, and keep the plants in the shade for a week afterwards. *Caution*: Bisulphide of carbon is highly inflammable and poisonous, and its application should be made in the open, far from any light. It is important that Ferns be watered very carefully.

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY: *H. P.* Communicate with the Secretary of the Royal Horticultural Society, Vincent Square, Westminster.

LENT LILIES: *H. H.* In order to obtain the best results from bulbs planted in grass it is imperative that the foliage be allowed to remain until it withers away. The leaves perform the work of elaborating the material that is stored up for next season's growth, therefore do not cut them off with the mowing machine, or let them be grazed off by cattle. When all that is practicable has been done, bulbs are not always successful among grass, and they have continually to fight for their existence. But you need not restrict yourself to the variety known as Lenten Lily, but plant any of the commoner varieties, and some will then show themselves to possess a greater degree of adaptability than others.

LOAM: *A. S.* We cannot undertake to analyse samples of soil, but would express an opinion upon its suitableness or otherwise for the purposes you mention. If you are a Fellow of the Royal Horticultural Society, you can have the soil analysed by the Society's analytical chemist for a small fee.

MANGOSTEEN: *R. G. F.* We are unable to point to any garden in these Isles where Garcinia Mangostana fruits satisfactorily. It has fruited at Syon House, Royal Gardens, Kew, and possibly at other places, but it is exceedingly shy, and we are unaware of anyone growing it for the purpose of producing fruits for table use. The tree may grow 10 or 15 feet high here, and the fruit was figured in the *Gardeners' Chronicle*, December 17, 1904, p. 428. We have tasted imported fruits and they have been disagreeable to our palate.

MUSHROOMS: *Zola.* Judging from the information contained in your letter, we think the failure is due to the use of defective spawn, or spawn that has become weakened through long keeping. There should be nothing risked when choosing spawn, and if there is the slightest doubt that it is not so good and vigorous as it might be, let it be discarded and a fresh sample obtained. In order that you may assure yourself that your beds are made properly and the correct temperatures observed, refer to the notes on p. 135 in the *Gardeners' Chronicle* for March 4, and p. 128 in the issue for February 25.

NAMES OF FRUITS: *J. C. W. & Son.* Tyler's Kernel.—*J. Taylor.* 1, Reinette Granville; 2, Galloway Pippin.—*W. Camm.* Pigeon.—*Lady Malcolm.* The largest fruit is Catshead, and the smallest one Cox's Orange Pippin. The other is Whitmore Pippin.—*W. H. S.* 1, Northern Spy; 2, Tower of Glamis; 3, Birmingham Pippin; 4, Calville St. Sauveur; 5, Claygate Pearmain; 6, Ringer.

NAMES OF PLANTS: *T. N.* 1, Forsythia suspensa; 2, Hedera helix var. pedata.—*D. & W. C.* Brunsfelsia (Franciscia) eximia.—*J. J.* Narcissus Telemonius plenus or double Van Sion.—*G. B.* Probably Andromeda calyculata, but the specimen is insufficient.—*E. T.* The variety you send is called in some gardens Cœlogyne cristata intermedia. It is between the variety Lemoiniana and the original form. The yellow colour on the lip varies from one year to another on the same plant, and the difference is not important.—*H. P., Cardiff.* Dendrobium speciosum.—*C. B., Braintree.* The fine form of Lælia flava known as Lælia Cowani.—*J. C.* Odontoglossum crispum, which may be good when established.—*J. Y.* 1, Dendrobium nobile Cooksoni; 2, D. nobile; 3, D. crassinode; 4, D. chrysotoxum; 5, Sophronitis grandiflora; 6, Masdevallia Harryana; 7, Epidendrum selligerum.—*E. B., Worthing.* Albuca caudata of Jacquin.—*G. H. B.* 1, Forsythia suspensa; 2, Erica mediterranea; 3, Anemone Hepatica varieties; 4, Scilla sibirica; 5, Corydalis bulbosa; 6, Muscari botryoides, the Grape Hyacinth.—*D. W.* 1, Codiæum (Croton) angustifolium; 2, C. pictum; 3, C. Weissmani; 4, C. interruptum; 5, C. irregulare; 6, C. angustifolium maculatum.—*V. I.* 1, Eulophia macrostachya; 2, Liparis longipes; 3, Eria bicolor; 4, Adiantum sulphureum.—*C. E. F.* Sprekelia (Amaryllis) formosissima.

NICHOLSON'S DICTIONARY OF GARDENING: *A. K.* We are informed by the publishers that it is the old edition in eight volumes that is sold for £3 8*s.* In order to make this complete it would be necessary to purchase four supplemental volumes at 8*s.* 6*d.* per volume. The edition sold at £4 2*s.* is a complete one.

PEACH SHOOTS DISEASED: *Persica.*—Your tree is affected with the disease known as "Silver leaf." The cause of the disease is not perfectly understood. It has, however, been found that an application of a solution of iron-sulphate applied to the roots of the trees in the proportion of ½ ounce of sulphur to 2 gallons of water is beneficial.

PELARGONIUMS ROTTING: *E. F. C.* The rotting of the stems seems to be due to the plants having been planted too deeply in the first instance, and having received too much water during the winter. The top of the growths is sound, and would afford excellent cuttings for insertion now.

PLANTS FOR BORDER: *J. F. S., Wolverhampton.* Suitable plants that produce yellow or orange-coloured flowers are Zinnias, Gaillardias, Tagetes, Coreopsis Drummondi, Chrysanthemum coronarium, Antirrhinums (selected as to colour), Escholtzias, &c.

ROSE OF SHARON: *R. H.* Hypericum calycinum is generally regarded in gardens as the Rose of Sharon, but the authenticity is doubtful. Some authorities with equal uncertainty give the plant as Althæa frutex (Hibiscus syriacus).

THE FLOWER BEDDING IN LIVERPOOL BOTANIC GARDENS: *W. A. L., Portagela la Prairie, Canada.* The Crocuses and Scillas and Chionodoxas in early spring are followed by about 10,000 Narcissus and 20,000 Tulips, associated with large beds of Wallflowers. The scheme of summer bedding is a large one, and it is remarkably well carried out by Mr. J. Guttridge and his staff. Some thousands of the following plants are required for the work: Pelargoniums, Violas, Marguerites, Lobelias, Calceolarias, Tropæolums, Alyssums, Iresines, ornamental Beet, and Centaurea candidissima, all of which, excepting the two last-named species, are propagated from cuttings. One of the most important features of the flower gardening is the "carpet-bedding," to which sixteen beds, each 16 feet by 4 feet, are devoted. The designs vary each year, and are formed by the aid of the under-mentioned plants: Mesembryanthemum cordifolium variegatum, and varieties of Alternanthera, all of which are propagated from cuttings obtained from stock plants in spring; Mentha Pulegium gibraltarica, Spergula pilifera aurea, Herniaria glabra, Antennaria tomentosa, Arenaria cæspitosa, Ajuga reptans purpurea, Sedum lydium, Sempervivum in variety, Echeveria secunda glauca, Saxifraga hypnoides, Pyrethrum selaginoides, and P. "Golden Moss," a variety of recent introduction. These Pyrethrums are raised from seeds, but most of the other species are increased by division in the spring. The mixed borders contain a large number of herbaceous plants, and the Dahlia borders, in which some thousands of these plants are grown, as well as the botanical beds, in which the plants are arranged in the various natural orders. If you wish to employ similar bedding in the grounds of the General Hospital near Manitoba, you should have little difficulty in acquiring a stock of these plants from the nurserymen. A little pamphlet on the subject of carpet-bedding may be obtained for 6*d.* from Messrs. H. Cannell & Sons, nurserymen, Swanley, England, and there is a more expensive work by Karl Götze, price 15*s.* 6*d.*

THE PAGOSCOPE: *Several Correspondents.* We are informed that this instrument may be obtained from Mr. Phillips, 12, Charterhouse Street, London, E.C. The figures, it should be remembered, are arranged according to the Centigrade system, not the Fahrenheit, which is in common use in English gardens.

TOMATOS: *S. B.* The appearances are like those produced by the "sleepy disease," but we cannot be certain from your specimens. Probably you have grown them on too fast, with not sufficient ventilation.

VINE SHOOTS: *J. G.* From the appearance of the shoots we suspect the presence of a fungus disease called "browning." The disease "browning" is figured in the *Gardeners' Chronicle* for August 19, 1893, p. 217. The disease is caused by a fungus, Plasmodiophora vitis, one that is allied to the fungus causing finger-and-toe in Brassicas. You can do nothing against this disease but remove and burn the affected parts from the Vines.

VINES: *Puzzled.* The pieces of cane received are quite dead, nor do we wonder that this is the case. No plants should be expected to survive when a large portion of the roots has been killed by absolute lack of water, and their canes painted with such a caustic mixture as you have described. There is nothing to be done but to make a new border and plant fresh Vines.—*Geo. H.* The disease is caused by the Vine mildew, Plasmopara viticola. It is as yet in an early stage and could be checked by two or three applications of dilute Bordeaux-mixture at intervals of ten days. If it is not advisable to use Bordeaux-mixture in the house, then a spray consisting of one part by measure of lysol in two thousand parts of water may be used, and is equally effective.—*S. H. T.* The shoots are "fasciated" from overgrowth. They will not be detrimental. Probably you have overcropped the other Vines mentioned and have not sufficiently thinned the bunches.

VIOLETS DISEASED: *F. G.* Your plants are affected with a fungus, Ascochyta violæ, a disease that is troubling growers all over the country. Spray the plants with a solution of potassium sulphide, 1 oz. to 3 gallons of water, every fortnight. When planting season arrives select a fresh site for the beds, and obtain fresh plants from a distance that are free from the disease.

WORMS IN LAWNS: *P. Yule.* (1) Dissolve ½ oz. of corrosive sublimate (POISON) in 15 gallons of water, and apply it over the lawn; and when the worms come to the surface sweep them up. If the fowls eat them they will be poisoned. (2) If you mix a peck of freshly-made quicklime in 40 gallons of water, allowing it to stand until clear, and then apply the liquid from a rose watering-pot, it will also serve to bring the worms to the surface; but in this case they must be picked up by fowls or brushed up at once, as they are not poisoned. (3) You can obtain from Messrs. Cooper, Taber & Co., Ltd., London, a preparation known as "Chinese Worm Soap," or from Messrs. Read Bros., Ltd., Wolverhampton, their "Worm Eradicator."

COMMUNICATIONS RECEIVED.—G. N. R. (next week)—J. Dale.—H. M.—W. J. R.—Puzzled—J. C.—G. Cheltenham—D. M. L.—A. R.—F. H. S.—J. O.—J. M. T.—Y. D.—W. & Son (thanks for Cineraria flowers received)—H. M.—G. J.—E. F. H.—R. N.—J. Mc. I.—W. G. S.—H. L. & Son—C. W. S.—T. S.—Chloris—C. C.—W. G.—S. G. S.—G. Bunyard (with thanks)—W. C.—F. J.—G. A.—S. A.—F. M.—R. A. R.—J. J. D.—F. Paris—S. W. N.

THE
Gardeners' Chronicle

No. 955.—*SATURDAY, April* 15, 1905.

CONTENTS.

Apple Lord Burghley ... 235
Apples from the Cape ... 232
Belvoir Castle, spring flowers at 233
Books, notices of—
  Botanical Magazine ... 231
  Cassell's Popular Gardening 232
  Publications received 231
  Schlich's Manual of Forestry 232
Clematis grata... ... 229
Colonial notes—
  Transvaal, crops in the 230
  Uganda and the Victoria Falls 229
Cucumber "spot" disease and carbolic acid 235
Ferns, varietal names of... 229
Forests, wild and cultivated 233
Heath, a new hardy ... 228
Hole, Dean, the late . 232
Journal of the Royal Horticultural Society, the 231
Law note—
  Market gardener's claim for improvements 235
Lettuce 233
Liège, Horticultural Congress at 233
Mentone, a flower show at 225
Paths, garden 226
Obituary—
  Burrell, J. 240
  Rew, Mr. 240
  Wilson, James ... 240
Paul, William, the late 233
Peach-buds, dropping of 234
Peach-trees, manure for 234
Pelargonium "Clorinda" 232
Plants, new or noteworthy—
  Cœlogyne Lawrenceana 227
  Rosa sorbiflora ... 227
Potatos 234, 237
Sash-bars, anti-drip ... 234
Societies—
  Cornwall Daffodil ... 239
  Gardeners' Debating 239
  Royal Horticultural 232, 235
  (Scientific Committee) 237
Sugar-growing, up-to-date 231
Supplies from over-sea 233
Trees and Shrubs—
  Laurelia aromatica . 230
  Xanthorhiza apiifolia 230
Vines, grafted and ungrafted... 233
Week's work, the—
  Flower garden, the 231
  Fruits under glass... 231
  Hardy fruit garden 231
  Kitchen garden, the 230
  Orchid houses, the 230
  Plants under glass... 230

ILLUSTRATIONS.

Erica arborea and E. lusitanica, the parents of E. × Veitchii 228
Erica × Veitchii, a new hardy hybrid 228
Pelargonium "Clorinda," a handsome flowering plant with scented leaves (Supplementary Illustration).
Rosa sorbiflora, a new species from West Hupeh, China 227

A FLOWER SHOW IN MENTONE.

UNDER the auspices of the local authorities an excellent collection of plants and flowers was recently exhibited in the Mentone Public Gardens. These public gardens occupy a site immediately over the Carei River, which has been arched over to allow the waters to reach the sea. The gardens are well laid out, and present a very bright appearance. They form a striking feature, leading the eyes to a grand view of the outlying jagged flanks of the Maritime Alps. It is to be regretted that one quarter of the gardens was ruthlessly dug up and levelled in order to make room for the erection of the necessary tents, which cut off the view of a noble vista at a time when the season is at its height.

The tents were about 250 feet in length and 75 feet in breadth. A row of shrubs and Oranges formed a background to the tents, the centre of the roofs of which were raised lantern-wise, and the upper sides being covered with a white material afforded a soft and pleasant light. The remainder was alternately red and white in stripes. The tents were lofty, and, hung with national flags and banners, presented a cheerful appearance that is wanting in our British show-tents; while the gay colour, being elevated, did not "kill" the masses of flowers below. The tents were made in three sections.

Entering at the lower end of the tent, the first object that attracted attention was a grand bed of those bold spiked Stocks which are so largely grown in the Riviera. The centre was raised, and planted with the native yellow Coronilla, broken up by the crimson spikes of Antholyza, thickly set with its opposite flowers. The Stocks were planted in nine wedges of separate colours, among which was one of a conspicuous salmon-rose colour, another of a lovely primrose shade, the rose "Chair de Nice," Mauve de Nice, &c. The whole was surrounded by cut bracts of Bougainvillea, with a parallel line of the dwarf Centaurea candidissima, finished with a nearly oblong margin of fine moss having an appearance similar to grass. Next the gravel was a row of Centaurea, set with four small circles filled with French Giant Ranunculus in various colours, among which were disposed three fine spathes of Arums. A few flowers of Iris florentina (bluish-white) were placed next the centre bed, while dotted in the moss were single flowers of Tropæolums. The effect of the whole was excellent.

The table decorations were not equal to those seen at our own shows, being heavy and crowded, while one fails to appreciate the advantage of draping the falls of the white cloth with wreaths of Smilax, which would be in the way of persons when dining. The tables were set for eight persons, and for effect should have been double the size.

An exhibit from a local villa afforded evidence of the climate of the district, consisting of a magnificent display of cut Palm-leaves, fruit, and flowers, with Oranges, both Mentone and Jaffa, in splendid condition. The most distinct of the Palms were Kentia Fosteriana, with fruit similar in appearance to Olives, green in colour, and with a black eye; Cocos Romanzoffiana, the fruit of which was set close to the main stalk like very green Gooseberries, the points of the mass of stalks being bare of fruit and standing out on all sides, yellow in colour; Livistona sinensis, with loose bunches of fruits like Black Hamburgh Grapes; Phœnix canariensis, with fruit of golden-yellow colour, on very large diffuse stalks; Chamærops excelsa, with branched, compact clusters of rich violet berries; Phœnix senegalensis, with oval, ruby-red-coloured fruit, set on a loose panicle some 2½ feet long, the whole being most striking in appearance; Sabal Adamsoni, with small fruits similar to Black Currants in appearance; Pritchardia filifera, with flowers in an embryo state, and with greenish-yellow Dates; Cocos flexuosa (?), whose flowers look like long ears of Wheat, a branching spike 2 feet in length gracefully curving on all sides (probably staged the wrong way up); Seaforthia elegans, with a bunch of long grey filaments, similar to pack-thread, set with embryo fruits. This grand exhibit was well labelled. The largest leaves formed a background, while in the front was a flower-spike of the still rare Phœnix Robelini.

A trade exhibit by the firm known as "Au Myosotis" was superb. Words can scarcely convey an idea of its beauty and the taste displayed in the arrangement. It occupied four bays, separated by pillars made up with a mossy background, on which were sprays of corky Elm, lightened with long streamers of the wild Asparagus verticillatus, and picked out with superb Carnations, each pillar being of one colour. The Carnations were disposed singly, and were of a size never seen in Britain, except among the Malmaison race.

The bays were arched over; these were also decked with Carnations on a background of Myrtle, and the centre bore a huge device carrying the name in scarlet letters on a groundwork of white Stocks. Benches about 2 feet high and 15 feet deep were carrying very large fancy baskets of Roses on long stalks—Maréchal Niel, Ulrich Brunner, Magna Charta, G. Luizet, one kind only being placed in a basket. Screens and elegant baskets of glorious Carnations on long stalks were also included, the whole having a background of elegant Palms, forced Lilacs, and Snowballs (Gueldres Rose).

The eyes rested on any part of the display with pleasure, the general effect and harmonious arrangement being evidently the work of an artist.

The best Carnations were Fernandi Rondeau, of pale salmon colour freely striped and flaked with red; Elise Perrin, pure white; Olga, rather paler than F. Rondeau; Député Boccard, pale salmon ground with brick-red stripes (extraordinarily good in quality); Roi des Noirs, an enormous "Clove"; La Heliotrope, washy purple; one named Carlo Rodolphi was more curious than beautiful.

Among the most tasteful baskets and drawing-room devices of flowers were the following:—An oblong satin basket, the handle of which was dressed with salmon-coloured ribbon, the base inside being composed of half-opened Gueldres Roses with a suspicion of green in the flowers, above which rose a mass of the palest salmon-coloured Carnations rather to one side of the basket, and circling over the whole were branched sprays of Asparagus. This device was charming. In the same exhibit were grand baskets of Maréchal Niel and pink Roses, with splendid foliage. Among the exhibits of brides' bouquets was one very neat device in the form of a cone, entirely composed of Orange-blossom covered with tulle, and tied with the same material and white satin ribbon. Another with similar "millinery" was made with Druschki Roses, Carnations, white Lilac, and Myrtle. The bouquets were smaller than we make them in this country.

The 1st prize bouquet was accompanied by a shoulder-knot, a 2-feet bridal wreath of loosely set Orange-buds, and a pair of Orange-flower button-holes for the bridegroom, the whole forming a complete wedding set.

I must not omit to mention a superb basket of flowers arranged for a boudoir. It had a tall handle decorated with orange-and-pink satin ribbon completed with bows, and contained a plant of Azalea "Hermode," 2½ feet in diameter, palest salmon with a darker upper petal and creamy-white edge; a pink Hydrangea at each side, and a fine bold plant of Adiantum scutum in the centre—a most *recherché* arrangement. In another instance a harp of white Carnations, with strings of Violets and base of pale blush Carnations, with China rose-coloured satin ribbon, was very choice.

A green basket with handle some 4 feet in height, covered with pink figured ribbon supplemented with a bow, the handle centre being decorated with fine Phalænopsis sprays; on the right bright Anthuriums and Croton-leaves, and on the left mixed Orchids and paler Anthuriums — a most striking and elegant design. A lyre 4 feet high had the outer sides composed of Étoile d'Or Marguerites, the strings being made of Parma Violets, the whole being in very good taste. Another very beautiful device was a child's cane lounge. The back seat was of Parma Violets, with an arching of splendid Maréchal Niel Roses, and the front formed of more Maréchal Roses, which were remarkable for the size of their flowers and for their excellent foliage. The whole was set off with soft pale-rose ribbon, forming a real work of art. Baskets of Carnations, elegantly set up with tasteful "millinery," not out of place, made these groups, next to the "Myosotis," the most attractive in the show; and our London florists could with advantage take a few ideas from the exhibits.

In the same tent were trade groups of Palms, Araucaria excelsa, forced plants, Rhododendron molle and Belgian Azaleas, mostly staged on the ground, thus showing them off to advantage. A group of plants of standard and dwarf Prunus triloba was superb; while a private grower's group of Lilacs, Roses, Acacias, Magnolias, Wistarias, and Cinerarias was most creditable. Cut flowers in dirty (!) champagne "pints" were shown on long tables. There were glorious Anemones in several varieties, turban Ranunculus, among which the white variety Gloire de France was lovely. Some 1,500 Carnation flowers staged on one table were of the widest possible range of colour, but naturally not of the "quality" one sees in our London shows. The brightest among these were "Cherry Rose," a white Malmaison with a lovely salmon-pink centre and of extra large size; Tamagno, an immense loose white variety; Château Neuf, rose-coloured shaded with palest salmon; Rosa Bonheur, 3 to 4 inches across and striped like Charles I., an extra fine flower; Tonquiere, of a rich brick-red colour; Raynaud, purple-lake, and hundreds of numbered seedlings.

Another table contained magnificent plants of Stocks, the plants being 18 inches tall, branched, and with blossoms 3 inches in diameter; Iris Susiana, Jerusalem Iris, Tulips, and indifferently-grown Narcissi.

The members of the trade and several amateur growers put up a few Orchids and stove plants of small size. Gloxinias were of poor quality, interesting but not striking. One whole tent was filled with a display from the Monte Carlo Casino gardens. This exhibit was artistic in arrangement, the subjects well cultivated, and alone worth a visit, reflecting the greatest credit on the "Chef du Jardin," Mons. Van de Vaele. On entering the tent, a long central bench glowing in colour arrested the attention, while around the sides were arranged banks of plants whose foliage and colour gave a splendid effect. The eyes, dazzled for a few moments, rested satisfied on a group of clean, well-grown stove plants, in the centre of which stood a fine Vanilla plant. In this display were large specimens of Pothos, Asplenium nidus, Acrostichum grande, Nidularia, Codiæums (Crotons) Adiantum farleyense, and other beautiful plants. The central "stream" of colour was formed by blooms of Cyclamen papilio, which, although curious, are not to my fancy; C. latifolium giganteum, arranged in rows across, each batch containing some forty plants; the plants were two-year-old, and were well grown. Next was a mass of a pretty branching dwarf double-yellow Wallflower, Rayon d'Or. A bank of Hoteia japonica had better foliage than spikes of flowers, one hundred freely-flowered specimens of Primula obconica, some carrying blooms of a good purple shade, the whole batch being excellent. At one end of the exhibit was a set of finely-grown 12 to 15-inch plants of blue Hydrangeas, carrying bold heads of flowers, with as many as six to eight inflorescences on a single plant, although they were so dwarf. The foliage of these plants was most perfectly developed. In front of these was a number of plants of Xanthoceras sorbifolia, well flowered, but not more than a foot in height. The whole of this grand bank was edged with a violet form of Viola cornuta, larger than the species, which is of a deep lavender shade of colour. These plants were also used to edge the sides, totalling in all 1,000 plants.

Referring to the outside display, a set of twenty-four Bougainvillea splendens, forming 3 to 4 feet pillars of fiery purple, was superb, the front being toned down with Primula obconica. Plants of white forced Lilacs formed a background to the Bougainvilleas, whilst Phœnix Palms and Spiræa confusa (named Reevesii) alternated round the whole tent as a background.

Double Cinerarias followed a dwarf set of Lilacs (white) and single Cinerarias in every shade of colour, including one of a sweet pale blush. These were splendidly grown, not over 15 inches in height, with inflorescences a foot in diameter, but the flowers lacked the refinement and imbrication of some of our English strains. A fine group of larger plants of Hydrangeas of splendid culture completed the right side of the exhibit. On the left were displayed well-flowered Imantophyllums, Deutzia gracilis (very chaste and freely flowered), Lilac Charles X., well-grown Belgian Azaleas, including Mrs. Mendel, President Walters, and Apollo. A group of pot Roses of old varieties was not remarkable, but a large bank of Fortune's double white Prunus sinensis was grand. A mass of Heaths, backed with white and blue Wistaria, brought us to the end, the whole being completed by a grand bank of large Gueldres Roses, fine in foliage and flower. When it is understood that in some cases 100 plants of a kind were used, some idea of the general effect can be imagined.

The cut Roses in the "trade" groups had apparently been forced too rapidly. The varieties Isabel (a small white H.T. (?)), Rachel, Marie Louise (the latter resembling Gloire Lyonnaise, pretty white blooms, but small), and Druschki were the finest.

The show also included fruit, wine, and agricultural products. The only fruit I saw consisted of a few Reinette du Canada Apples, a so-called Calville Blanc (not the five-sided one we know), a Reinette d'Angleterre after Hollandbury, and forced Strawberries, Dr. Morère, the latter not equal to our variety Royal Sovereign. Green Peas and Beans were included.

Sacks of Rye-grass and of Clovers from Nice were all the agricultural produce noticed. A pretty bower of large branches of Lemon covered Olive-oil and wines of Mentone in bottles. Other exhibits of honey, wax, wines, and liqueurs, completed the show.

Bamboos and Palms made the entrance very taking, while a bed of Aloes and Agaves was a feature. My general impression was that we in England are in advance of the French in our cultivation, but lack their taste in arrangement, for the very good reason (as at the Temple) that we have not sufficient space at command to show the exhibits to the best advantage, nor could ground beds be formed where such crowds of people as we are accustomed to see are gathered together. *Geo. Bunyard, Mentone, April* 1.

GARDEN PATHS.

THESE may be roughly divided into these on which there is vehicular traffic, and those confined to pedestrians, or at most to a barrow. In the first are the carriage drive, the cart road to the back premises, and in a large garden the main paths, where a cart is often used to save labour. In laying-out a carriage drive it is desirable to get as easy a sweep as possible, both at the entrance and before the door of the mansion. Right angles are more or less difficult to manage, and particularly so at night, and should be avoided as much as possible in the pleasure grounds. But in the kitchen-garden all paths should be at right angles, as it is very desirable to keep the quarters for the vegetable crops either square or at least with parallel sides, and as the vehicular traffic is confined to slow-going carts, the sharp corners are not objectionable.

The width of the roads must depend on the size of the grounds, but no cart road should be less than 10 feet; 12 feet is better, and they may be made 20 feet with advantage if space allows. When the roads are laid-out they should be levelled when necessary, and for utility the more absolute the level the better, but a long approach to a house may undulate to certain extent, provided that the surface is good. If, however, there should be a very steep pitch, it is better to lower the road and let it run between banks for a time. On an approach never allow a pitch that will try a horse in the least. If the soil is wet or the road passes through damp hollows, a drain must be laid down on one side, and catch pits and traps put in at intervals, to take away the surface-water. In any case, even where a drain is not required, a gully should run down each side of the road with grips cut to carry off surface-water. Nothing ruins a road sooner than water constantly percolating into its foundations. The road should be excavated 2 to 4 feet deep, according to the nature of the soil. At the bottom of the excavation a layer of stones, rubble, clinkers, &c., should be laid to one-third the depth. On this a layer of broken granite, flints, or slag, evenly spread, and the last layer should be of the same materials, but broken so small that it will pass through an inch riddle. It will improve the wearing quality of the road if this last layer is lightly coated with tar before being laid. Pour some tar over a heap of material and turn it till the whole is lightly coated; then lay evenly and roll with a heavy roller. The middle or crown of the road should be slightly, but only very slightly, higher than the sides, just enough to carry off the water. If, as is sometimes the case, it is made very convex, not only is the labour of traffic increased, but the surface of the road is worn unevenly and needs constant repairs Near the house these roads may have an extra coat of gravel or granite chips, but, except for appearance, they are better as firm and clean as possible, as the labour of keeping them swept and rolled is much lessened when there is no loose material.

SMALLER PATHS.

The formation of smaller paths is merely a modification of the above. Traffic being lighter, there is no need to excavate so deeply, nor need the upper layer be tarred. As a general rule this upper layer consists of gravel, granite chips, or spar chips put on thickly and rolled. Be careful, however, to see that if gravel is used it is sharp and with a certain amount of sand. Water-worn gravel should never be used, the smooth, rounded stones always remain loose, require constant attention in raking and rolling, and are very uncomfortable to walk on. Ashes from the stokehole make a good surfacing for paths in back premises, but wherever possible asphalt is to be preferred. As usually prepared, asphalt requires the tar to be boiled, but this is not really necessary. A good, cold asphalt, which will last twenty years, is prepared with small, sharp, sandy gravel and tar. Make a heap of the gravel with a hole in the centre, and pour in the tar. Turn the sides into the middle, and mix thoroughly as you would mortar. Let it lie in a heap for two or three days, and then re-turn, adding more sand or tar as may be necessary. It is impossible to give the exact proportions, as some gravel requires more tar than others, but when properly mixed it should not stick to the boot when trodden on. A good test is that when on a heap it should move as a heap of mites does in a cheese. A little lime helps to dry it, but too much causes blisters in the path when laid. The longer it remains in heap the better. Make the foundation of your paths of clinkers or stones, and lay the asphalt 2 or 3 inches thick. A cubic yard of sand will make enough asphalt for 12 to 15 yards of path.

Where there is no wheeled traffic at all, nothing looks better than grass, but it takes a great deal of work to keep it in proper order, and unless so kept is the worst path you can have. For woodlands and rough paths where it will grow, Ling makes a capital path. It must be mown short twice a year, and the young shoots will make a thick elastic carpet very pleasant to walk on. Where Ling cannot be grown, nothing is better for these rough woodland paths than Pine needles. If spread thickly they soon decay, and are always dry and pleasant to walk upon. *J. S. Turnor.*

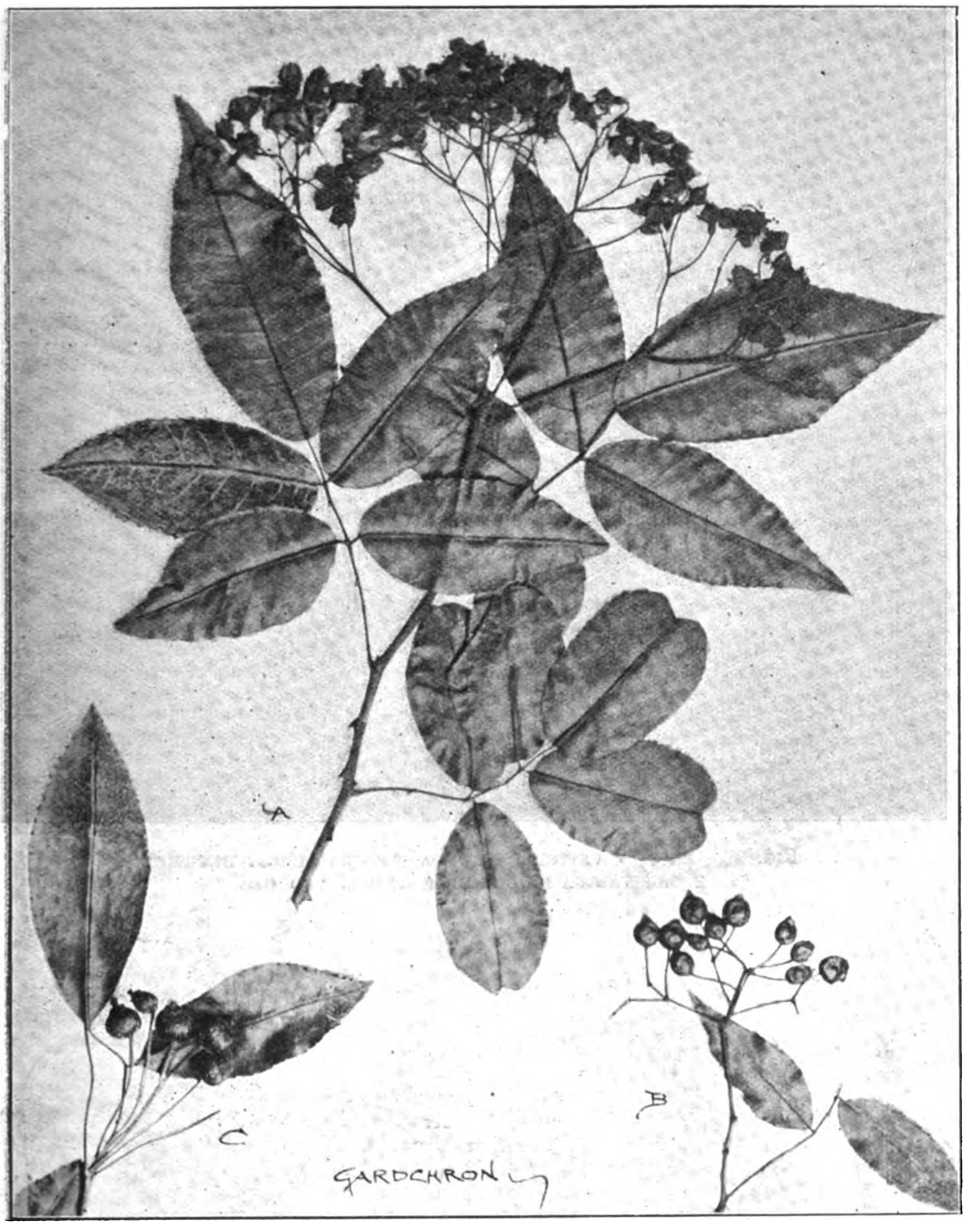


FIG. 96.—ROSA SORBIFLORA: A NEWLY-DISCOVERED CHINESE ROSE.
A, flowering spray; B, inflorescence of R. sorbiflora; C, simple inflorescence of R. Banksiæ.

NEW OR NOTEWORTHY PLANTS.

ON A NEW CHINESE ROSE: R. SORBIFLORA, *Focke, n. sp.* (FIG. 96.)

I SUGGEST this name because the inflorescence is like that of Sorbus. Inflorescence at the end of the branches, corymbose (branchlets many-flowered) as in Sorbus or Viburnum (fig. 96, B). Flowers about ½ inch (scarcely 2 cm.) in diameter. The outermost sepals often with filiform or trifid appendices. Styles elongated over the orifice of the receptable; fruits scarcely 5 mm. in diameter. Climber, 6 feet high. West Hupeh (coll. E. H. Wilson, 828).

The new Rose, collected by Mr. E. H. Wilson in Central China, belongs to the section Banksiæ, which has been characterised by Crépin as follows:—

"Styles free included; stigmas forming a sessile head over the orifice of the receptacle; sepals entire, reflexed after flowering, caducous; inflorescence many-flowered, umbellate, with very small caducous bracts; stipules free, subulate, caducous; leaves on the flower-shoots 5 to 7-foliolate; stems sarmentose, prickles hooked, alternate."

This description is founded on R. Banksiæ, R. Br., the only hitherto known species of the group. After the discovery of a second species it must be modified as follows in the characters of styles, sepals, and inflorescence. The two species are closely allied, but they can be easily distinguished when in flower or in fruit.

ROSA BANKSIÆ, *R. Br.*

Inflorescence at the top of the branches, subumbellate (branchlets one-flowered) (fig. 96, C). Flowers about 1 inch (3—4 cm.) in diameter. Sepals entire or the outermost occasionally with a few scattered small teeth. Styles included, the stigmas covering the orifice of the receptacle; fruits about ⅓ inch (8 mm.) in diameter. Hab. Central China. White and yellow-flowering double varieties cultivated in European gardens. *W. O. Focke.*

CŒLOGYNE LAWRENCEANA, *Rolfe, n. sp.**

Messrs. Sander & Sons' recent importations from Annam prove to be particularly interesting, the latest novelty being a Cœlogyne of the speciosa group, which was exhibited by Sir Trevor Lawrence, Bart., at the meeting of the Royal Horticultural Society on March 28 last, when it received an Award of Merit by the Orchid Committee. The species of this affinity are not common in gardens, with the exception of C. speciosa itself; but a striking species known as C. Micholitziana is found in a few collections, and C. psittacina is represented at Kew, having been lately in flower there. The present species is distinct from all of them, and perhaps most resembles C. Micholitziana in habit, though the flower is nearer to C. speciosa in size, and borne on a taller scape. C. psittacina is of more robust habit, but has smaller flowers of different colour, and the scapes are produced from the young growths, not from the mature bulbs, as in C. Lawrenceana. The latter has light buff-yellow sepals and petals, while the front lobe of the lip is cream-white, and the disc deep orange in front and bright yellow near the base. There are five keels on the disc of the lip in front, which are much fimbriated and tipped with brown, while the inner three extend down to the base. It is a very interesting addition to the group. *R. A. Rolfe.*

---

* *Cœlogyne Lawrenceana, n.sp.*—Pseudo-bulbs ovoid-oblong, 2 to 3 inches long, 1 to 1¼ inch broad, diphyllous. Leaves broadly lanceolate, accuminate, attenuate at the base into a distinct petiole, 8 to 11 inches long, about 1¼ inch broad. Scape arising from the apex of the mature pseudo-bulb, about 7 to 8 inches long, 1-flowered. Bract spathaceous, clasping the rhachis, obtuse, striate, 1¼ to 1½ inch long. Ovary 14 lines long, with six very prominent angles. Sepals oblong, somewhat narrowed towards the apex and subacute, obtusely keeled behind, and somewhat gibbous at the base, 2 inches long. Petals linear, acute, nearly 2 inches long by rather over a line broad. Lip strongly 3 lobed, 2 inches long, subsaccate at the base; side lobes oblong, rounded at the apex, 1¼ inch long; front lobe broadly ovate, apiculate, somewhat undulate, recurved, 1¼ inch long; disc with three rows of crested keels extending to the base, with an additional pair at the base inside the lateral keels, another at the apex outside the lateral pair, and a few additional teeth on either side nearer the margin; filaments of crest 1½ line long in front, the rest about ½ a line long. Column clavate, incurved, winged in the upper half and at the apex, 1½ inch long. Colour of flower light buff-yellow, with the front lobe of the lip cream-white, and a larger orange blotch at the upper part of the crests; below this and on the upper part of the side lobes the ground colour is irregularly marbled and dotted with light cinnamon, while the base of the lip is bright yellow, and the crests are tipped with cinnamon. Column whitish-green. *R. A. Rolfe.*

PLANT PORTRAITS.

Iris "Parsamb" ×. *Flora and Sylva*, March.—A hybrid raised by Sir Michael Foster between I. paradoxa and I sambucina. Flowers purple with gold-coloured streaks on the falls.

Meconopsis integrifolia, *Flora and Sylva*, March; see also Supplement to the *Gardeners' Chronicle*, October 1, 1904.

ERICA VEITCHII ×.

This is a hybrid raised and exhibited by Messrs. R. Veitch & Sons, of Exeter, between E. codonodes (of which a good illustration was given in our number for February 6, 1904, p. 91) and E. arborea, the arborescent Heath which occurs on the Riviera. Mr. Worthington Smith's illustrations (figs. 97 to 100) suffice to show the character of the plant and the main differences between it and its parents. Artificial hybridisation, owing to the conformation of the flower, must be a difficult matter, though an insect might accomplish the feat. The appendages at the base of the anther as shown in the sections of the flower differ considerably in the two species, those of the hybrid most resemble those of E. arborea in this respect. The pollen-grains, as observed by Mr. Smith, differ slightly in the two parent species, whilst those in the hybrid (fig. 100) are unlike those of either progenitor. The plant is a decided acquisition to the **number of our hardy Heaths, and is especially valuable for flowering freely at this early season.**

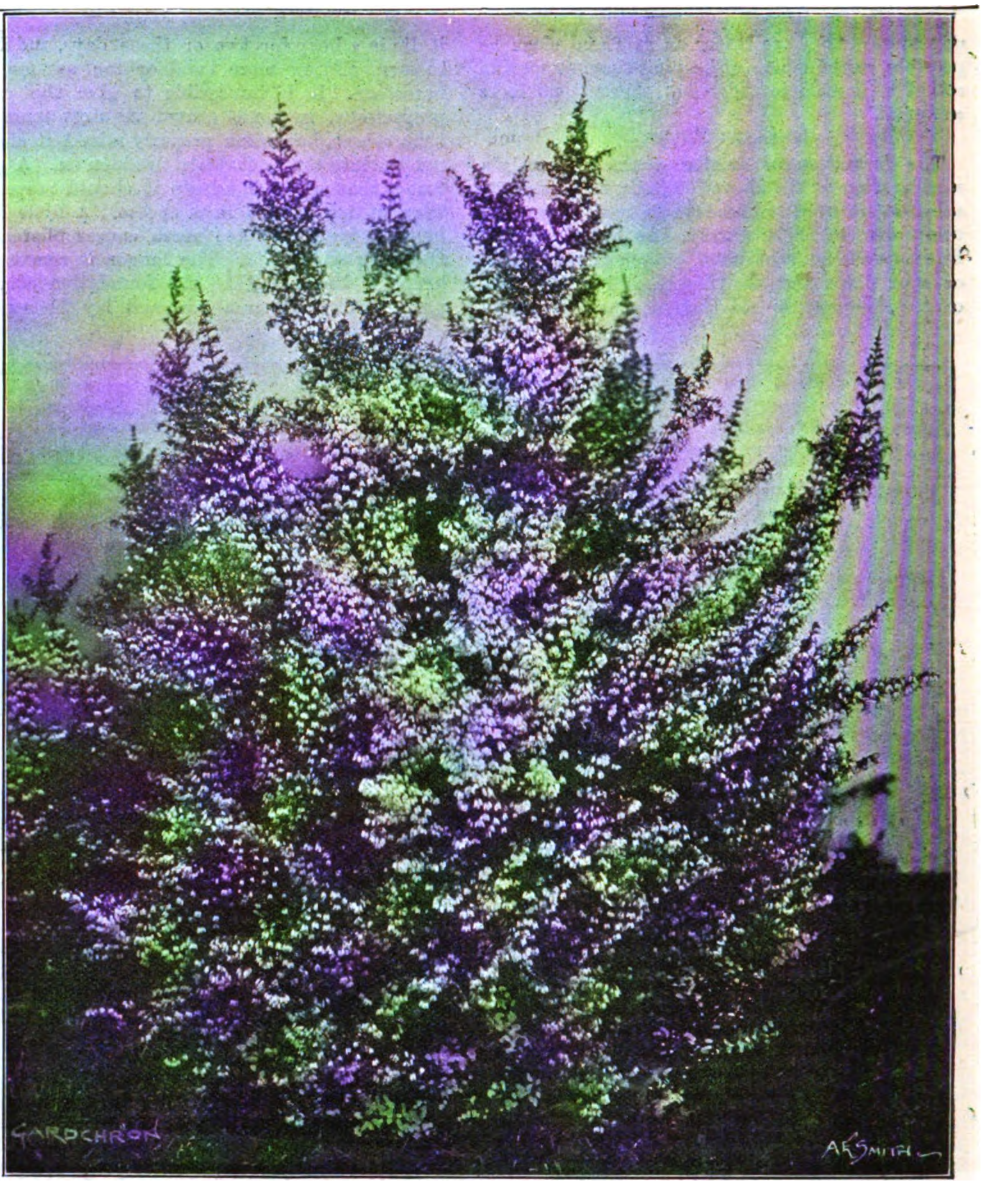


Fig. 97.—Erica × Veitchii, from a natural cross between E. lusitanica (codonodes) and E. arborea.

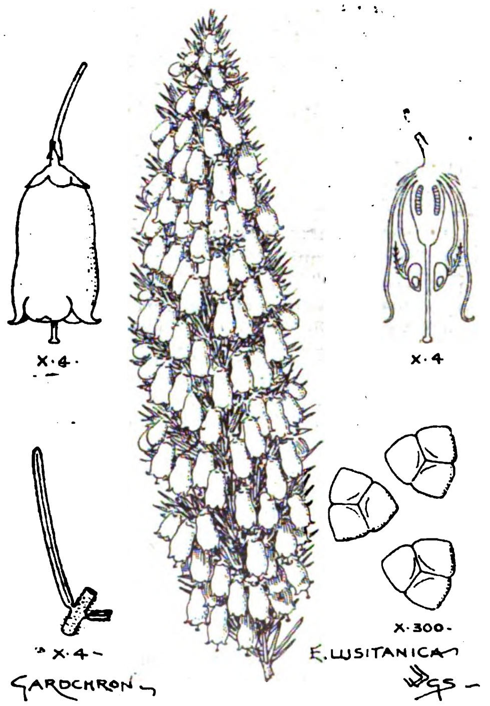


Fig. 98.—Erica lusitanica (codonodes), one of the parents of E. × Veitchii.
Showing a single leaf, a flower, and a section through a flower, all magn. 4 diam.; pollen-grains magn. 300 diam.

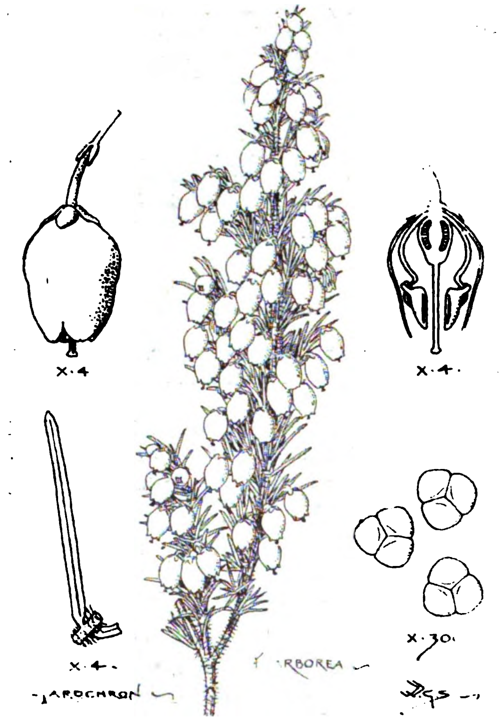


Fig. 99.—Erica arborea, one of the parents of E. × Veitchii.
(Details as in fig. 98.)

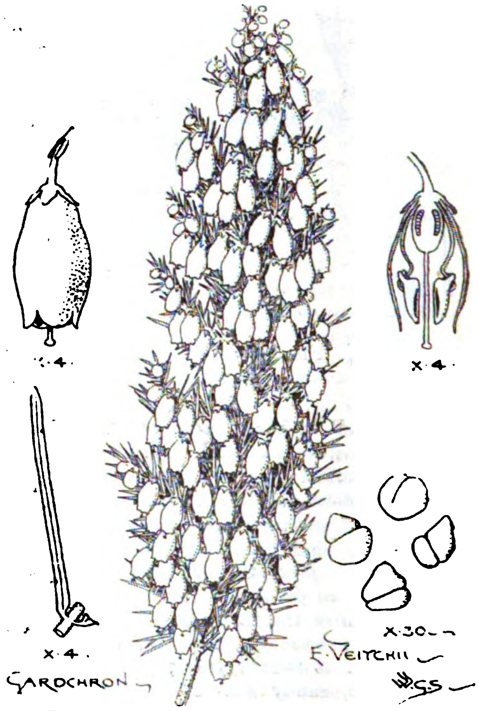


Fig. 100.—Flowers and structural details of Erica × Veitchii.
(*See Figs.* 98, 99; *notice the distorted pollen grains of the hybrid.*)

THE FERNERY.

FERN VARIETIES: A PROTEST.

ALTHOUGH I have long been accustomed to see these varieties more or less ignored in botanical literature, and can quite understand that they necessarily occupy a subordinate position with respect to normal species, I nevertheless think it a pity that in a presumably up-to-date work like the *Manual of British Botany*, Babington, ninth edition, edited by Henry and James Groves, varieties should be alluded to in the following out-of-date fashion.

A footnote appended by the editors named to Order C. Filices runs as follows:—

"Dr. Boswell, in *E. B.*, ed. 3, vol. xii., described many varieties of Ferns, and these are enumerated in *Lond. Cat.*, ed. 9. We have not, however, thought it desirable to include most of them, as they were no doubt known to Professor Babington and rejected by him as unimportant. The vegetative organs of Ferns are so liable to trivial variations that there is no limit to the number of forms which might be described. *H. & J. G.*"

It will be observed here (1) that reference is only made to what is now ancient literature in the varietal connection, ignoring entirely recent publications by specialists; and (2) that "trivial" variations alone appear to be in the editors' minds. Surely, now that it has been demonstrated so clearly that a great number of variations are by no means trivial but extremely marked, and that some of these moreover have been recognised as scientifically of the highest interest, especially in the reproductive direction —aposporic and apogamic forms to wit—such a reference is inadequate and misleading.

The amusing part of the matter to the varietal specialist is that in such a case as Athyrium filix-fœmina, in which so many extraordinary forms have appeared, we have several so called varieties described, such as A. rhœticum, A. convexum, A. latifolium, A. molle, and A. trifidum, with the appended remark that "there are innumerable sub-varieties," while all these are now regarded as mere sub-varieties, and are indubitably trivial as compared with varieties proper. In Lastrea filix-mas, again, no notice whatever is taken of G. B. Wollaston's undoubtedly justifiable division of this species into three well-defined sub-species, L. pseudo-mas, L. f.-mas, and L. propinqua, nothing later than Newman's book being referred to, though surely the valuable work of succeeding writers and authorities, who knew and know infinitely more than Newman could have known in his day, should have some recognition in a book which purports to be a student's guide.

I fully recognise that the book in question is condensed as much as possible, but this does not justify the lack of contemporary knowledge indicated by references to now ancient authorities who, however much we may revere them as pioneers, have long since been superseded as authorities in this special direction. In Newman's time the capacity of sporting into new and constant types was only just beginning to be recognised, and at first numerous sub or trivial varieties were noted and named by Newman and others, only subsequently to be regarded in their proper light, and relegated to practical oblivion when the really typically distinct "sports" turned up. Nevertheless we find these pioneer forms still persistently chronicled in scientific botanical catalogues and handbooks, while the real varieties subsequently discovered as wild sports, and therefore of botanical interest, morphologically and otherwise, are ignored. This should not be. *Chas. T. Druery, V.M.H., F.L.S.*

PLANT NOTES.

CLEMATIS GRATA.

Two or three years ago, when selecting plants of this species for covering a low wall, I was told that it belonged to the herbaceous section. This has not proved to be the case here in Derbyshire, and I find that last year's growths are quite sound and plump in bud to a height of 6 feet at least. The same thing has occurred during the past two winters, consequently we may, I think, consider that its herbaceous character is non-existent, which is all for the best. In my opinion, it is one of the very best plants that has been introduced for some years past for covering a low wall or similar position. The whitish flowers, tinged on the back of the petals with purple, are borne with great freedom all over the plants, and are succeeded by silvery rosettes, reminding one strongly of the "Old Man's Beard" Clematis of our woods and lanes, so that the plant is beautiful for a long season, beginning in August, and even when in leaf only it has a cheerful and vigorous appearance that is pleasing. Unfortunately, caterpillars seem very fond of the leaves, and if not checked will eat big holes that are disfiguring in them. C. grata is very easily grown and managed, as its growths have no tendency to become tangled as they do in the true climbing forms. *J. C. Tallack, Shipley Hall Gardens, Derby.*

COLONIAL NOTES.

UGANDA AND THE VICTORIA FALLS.

I LEFT Mombasa on October 17, and arrived twenty-four hours later at Nairobi, a place 300 miles up the great Uganda Railway, towards the great lake, after a most interesting journey. It seems hardly credible, and yet it is a fact that from the train one sees thousands of head of game. Buck-antelopes, and even zebras (a drove of which actually crossed the line in front of us), and sometimes giraffes and lions are seen. Only recently a rhinoceros charged the train, but the latter came off best, reminding one of George Stephenson's "So much the waur for the coo!"

This place, though only about 120 miles from the equator, is over 5,000 feet above the sea-level, so that though at mid-day the heat is great, the early mornings and late afternoons are nice and cool, with nights naturally always cool—a state of things which differs from the popular conception of equatorial regions. In my carriage I had a gentleman who is a member of a well-known English firm of machine-makers. To-morrow I am completing my explorations of this part by going right on to the Victoria Nyanza and across to Entebbe, the European capital of Uganda, which will be on the very outside boundary of civilisation and quite far enough into Central Africa! But I hope to have time to spare to have a look at Port Florence, the rail terminus, and take the trip across the lake, the source of the mighty Nile.

THE VICTORIA NYANZA.

Going aboard the steamship *Sybil*, lying alongside the little landing-stage at Port Florence, it was a surprise to me to find quite a miniature liner of some 600 tons, with commodious two-berth cabins (one of which I had to myself all the time), fitted with mosquito-nets, lit by electric light, and ventilated by electric fans, ample and well-kept decks, with an excellent table. The trip was thus rendered most enjoyable, and it was hard to realise that one was near the interior of Africa on an inland sea. The Victoria Nyanza is some 300 miles or more long and, say, 200 miles wide. We left at noon on Monday, and anchored for the night in a beautiful little bay, and arrived on Tuesday afternoon at Entebbe, a very pretty place, and in which I spent Wednesday and had a good official "look round," lunching with the Superintendent of Works, to whom I was introduced by a fellow-passenger, Dr. Moffat, nephew of the famous missionary and explorer of the same name. We left again on the Wednesday afternoon for Munzonga, on the north-west side of the lake, and two hours distant from Entebbe. The pleasure of the lake trip is enhanced on the northern side, at all events, by the steamer skirting the mainland or islands, the latter being often beautiful. The whole of Thursday being available, a fellow-passenger and myself set off for an 8-mile walk through the Banana groves of "Darkest Africa" to Kampala, the native capital, containing out of about 70,000 inhabitants only some twelve white men! I had an introduction to an official of the Church Missionary Society, and he showed us great hospitality, taking us all over the mission schools, cathedral, &c., and entertaining us at luncheon. It is a real native town, and the first I have seen. Only a few years ago it was the seat of much barbarism and cruelty. In the afternoon we called upon the King of Uganda (Dandi Chwa), a little boy of eight or nine, who received us with his courtiers kneeling around him—a picturesque scene! We finally returned to the boat safely at 7.30 P.M., after a most interesting day in real African surroundings—an experience I would not have missed on any account, and one that I feel lucky to have had, for but few ordinary globe-trotters get up to the great lake as yet.

Leaving Munzonga on Friday morning after a most agreeable trip, ending by our arrival at Port Florence on Saturday, yesterday I commenced my train journey of some 600 miles to the boat, due at Mombasa on November 1. We left Mombasa on Sunday morning by the German boat, and arrived in Zanzibar on the Tuesday, after spending the Monday in Tanga, German East Africa, a pretty, modern town on a fine bay, inhabited almost entirely by German officials.

ZANZIBAR, &C.

Zanzibar is a most picturesque and old-world town, one of the most famous ports in the world, the shipping of many countries lying in the harbour. Yesterday a French cruiser and four torpedo-boats came in, on the way to Madagascar, and I have had a row round them, taking snapshots. I suppose if it were a French harbour I might be "run in" as a spy!

I left Zanzibar on November 18 by the *Kronprinz*, calling at Dar-es-Salaam at noon the same day. This is a most beautiful town, the capital of German East Africa, situated on an almost land-bound harbour, and surrounded by Cocoa-nut Palms.

From Dar-es-Salaam we had a pleasant trip to Mozambique, where we arrived thirty-six hours later. This is an ancient decayed Portuguese town, with stagnant trade, on an island 3 miles by 1½ mile in area—a singularly uninteresting place, and which we left the following day, calling off Chindi (Zambesi mouth) to tranship passengers for British Central Africa, and arrived at Beira at daybreak on the Thursday morning; leaving two days later for Delagoa Bay *en route* for Salisbury (in Rhodesia) and Bulawayo, thence twenty-four hours' ride by train to the Victoria Falls—one of the World's Wonders.

THE VICTORIA FALLS.

It is hopeless to attempt to describe the sublime grandeur of these Falls; they defy all word-pictures, and baffle the most expert photographer. A mile and a quarter wide at that point, the Zambesi drops 400 feet into a sheer chasm only some 200 feet wide, I should say, and then flows out through a comparatively narrow and sharply winding gorge. The force is so great that the whole chasm is full of foam-spray, which rises hundreds of feet above the summit of the Falls, and forms a smoke-like pall that causes the natives to name the spot Mosi-on-Tunga, or "The Smoke that Sounds." This spray quite obscures the view from time to time as one stands on the edge facing the Falls; but ever and again a whiff of wind sweeps it aside, and the ever-varied glimpses are superb. A beautiful feature is the rainbow, which is constantly to be seen in the spray below, quite circular in shape. On the south bank of the Falls is the "Rain Forest," beautiful timber and Fern growth, kept evergreen and fresh by this soft warm spray falling upon it. Maidenhair Fern especially flourishes. I am sending some specimens from the forest on the edge of the famous Falls, but I am afraid by the time they arrive in England there will not be much, if any, life left in them. The two Ferns are much like our common Fern or Bracken at home, but the bulb I do not know at all; they are from quite a subtropical habitat. The famous bridge is not yet completed. In my opinion it will not at all spoil the general view of the Falls, being quite out of range. After four days and nights in a train southward bound I found myself in Cape Town once more on Christmas Eve. *W.*

Heidelberg, Transvaal.

Some of our readers may be interested to know what crops are likely to succeed in this district. We therefore insert the following extract from a private letter:—

> "*Heidelberg, Transvaal.*
>
> Green Peas Dr. Maclean are far and away the best that have ever been grown in this country. The pods are from 4½ to 5 inches long, with nine (average) fine Peas. These Peas are at a disadvantage too, as we have no sticks, and have to use wire netting and string. Beets and Carrots are doing first-rate. Cabbages are splendid, sown in the open ground, and were very easy to transplant, as they were all along so firm and solid. Broad Beans have done well—in fact everything is looking as well as it possibly can do. Mignonette is large and bushy and very sweet. The Sweet Peas are very fine, as also is the Ice-plant. I have had splendid luck with Marrows, and we have made some fine jam. When we come to think of the burning dry heat, it is surprising how well things do. The golden Tomatos are looking very healthy and strong, and Lettuces, since I found shade for them (Cos), are doing thoroughly well."

The seeds were obtained from Messrs. Sutton & Sons.

TREES AND SHRUBS.

LAURELIA AROMATICA.

Some time since Mr. F. W. Moore, of Glasnevin, kindly drew our attention to this most attractive evergreen. It is hardy, the foliage of a deep rich green colour, and delightfully fragrant. We gave an illustration at p. 401, December 10, 1904, and venture to call attention to it again, as its merits are not known to many. Moreover, Mr. Moore has kindly furnished us with specimens bearing flowers which are of great botanical interest, although not specially decorative. We need only refer to our former note.

Xanthorhiza apiifolia.

This is an interesting shrub evolved apparently for the purpose of puzzling the botanical student, for in spite of its very different external appearance it is really a Ranunculaceous plant. It is a low-growing shrub, sending up suckers from the creeping root-stocks; the foliage is pinnate, arranged on the end of the naked shoots, and with slender axillary spreading loose racemes of small purplish flowers. It is a native of the Eastern States of North America, and is a very old inhabitant of our gardens, though now rarely seen. The name Xantho-rhiza was given in allusion to the yellow colour of the root as seen when cut. The stem is similarly coloured. Our attention has been lately called to it by Sir Herbert Maxwell, who came across it in a wood, where it had been planted probably for game covert. From its presumably poisonous nature it is distasteful to rabbits, and so remains uninjured where no Holly gets "half a chance." It is well adapted for growing in shady places under trees, and affords excellent cover for game.

The Week's Work.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Cool Orchids.—Wherever a varied selection of cool Orchids is grown there should now be a good floral display. Odontoglossum crispum in variety, with hybrids from it and others, O. Pescatorei, O. triumphans, O. Hallii, O. luteo-purpureum, and others of Columbian origin are now in season. Whilst the plants are still growing and developing their flowers, the rooting medium should be kept in a moist condition, but when the spikes have been removed induce the plant to rest by withholding water so long as the pseudo-bulbs retain their plumpness. Mexican Odontoglossums, such as O. Rossii, O. Oerstedii, O. Cervantesii, &c., are now passing out of flower. These thrive well if suspended near to the roof-glass, and require a long period of rest after flowering. The first two species will only need applications of water at rare intervals, but O. Cervantesii should be given a more frequent supply. All growing plants of the different species will derive great benefit from liberal supplies of water at the present time, even if the rooting medium contains leaves, but should any continue to remain wet for a long time without appearing to get dry, something is wrong with the compost or drainage. Many of the Oncidiums will now be approaching their flowering period, such as O. concolor (a species that flowers at the end of its resting season), O. Marshallianum, O. crispum, O. Gardnerianum, O. Mantinii, O. prætextum, &c., which flower simultaneously with the completion of their pseudo-bulbs. The above should be supplied with sufficient water to keep the materials moist so long as root-action is going on, and to prevent undue exhaustion in the pseudo-bulbs, remove the spikes when the apical blooms expand. O. macranthum and allied species are always in a state of more or less growth, and must not be subjected to a lengthened period of rest. As the flower-spikes develop train them round three or more stakes fixed in the pots, and should slugs or snails be suspected place cotton-wool round the spikes near their bases. Many of the small-growing Masdevallias may have new surface materials afforded them, and M. tovarensis, now commencing to grow, may be resurfaced or potted as required. Those of the Chimæra section that need them may have new baskets provided, using shallow ones, without any drainage material other than a stick or two of charcoal laid transversely on the bottom bars. For these and other species use a compost of good sandy peat and sphagnum-moss in equal parts, half filling the receptacles with drainage, and covering this with sphagnum-moss.

Sophronitis grandiflora.—The plants having flowered will almost have reached their limit of growth, after which rest should be induced gradually by giving them less water. From the present time until autumn these should be accommodated on a stage well removed from the roof-glass.

Trichopilia fragrans needs treatment similar to that afforded Odontoglossum crispum, and should have its cultural needs attended to as soon as new growths appear. T. suavis, now flowering, should rest again until growth begins, when the plants may be potted or resurfaced as required. Plants of this species thrive well in well-drained pans suspended at the warmest part of the cool-house during the summer months, giving them a similar place in an intermediate-house on the approach of winter. Much water is only needed when the plants are rooting freely. T. coccinea, T. crispa, and T. marginata are intermediate subjects, and need a good supply of water when growing, with a decided rest afterwards. T. tortilis needs very dry treatment, and thrives best when suspended near the glass.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Chrysanthemums.—The work of potting on Chrysanthemums from the 60-size pots into 32's (6-inch pots) should be pushed forward. For a time, after being repotted, it will be necessary to keep them in an atmosphere somewhat close, afterwards admitting air freely when they commence to root into the new soil. In preparing a suitable compost for them do not employ artificial manures at this stage.

Plumbago coccinea grandiflora is extremely valuable, whether grown for supplying flowers for cutting or for affording plants for grouping. The plants flower in November and December when there is much table decoration, &c., to be done. Cuttings taken now and inserted three or four in small pots filled with sifted peat soil and loam, will make roots quickly if plunged in a propagating-frame. They will make nice plants by the autumn, but plants two and three years old should also be grown for affording a large supply of flowers. These are now starting into growth, and the roots will be shaken out of the pots and some of the soil be got away by means of a pointed stick. The plants will be repotted in a compost consisting of loam and peat in equal parts; a little broken dried cow manure and charcoal, with silver-sand, being added. They will be stood in a house having a warm, moist atmosphere, where shade from the sun's rays can be afforded, and should be syringed frequently to prevent an attack of red-spider, to which the plants are very liable unless grown under these conditions.

Dimorphotheca Eckloni is very suitable for growing in batches for furnishing a cool conservatory. Cuttings are some time before making roots, but grow away quickly when rooted. They require pinching several times to induce a bushy habit. Several cuttings may be placed round the side of a pot. The pots should be plunged to the rims in ashes under a handlight in an intermediate-house in preference to a warm propagating-frame. A little lime-rubble mixed with loam and leaf-soil and silver-sand suits them admirably.

Kalanchoe flammea.—Plants of this useful and bright-flowering plant may be easily raised from seeds or cuttings, and by either of these methods, if carried out at different times, early and late batches of plants may be obtained. Cuttings should be inserted simply in pots and treated as advised for Dimorphotheca Eckloni. Seeds should be raised in considerable bottom-heat. When the plants are making growth they will require to be dipped frequently in "quassia extract."

Souvenir de la Malmaison Carnation.—Several of the varieties are now showing their flower-buds, and will require careful staking. The side-buds should be removed as soon as they can be conveniently handled, and care must be taken not to damage the leading or main bud in doing so. Afford the plants applications of weak liquid-manure from the farm, and occasionally sprinkle over the surface of the soil a little of Clay's Fertiliser or some fish-manure.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Vegetable-Marrows.—Plants that were raised early may now be planted on hot-beds or in portable frames which have been cleared of Asparagus. The soil employed for early plants should not be very rich, nor should it be used in excessive quantities, otherwise there will follow unfruitful growth. Artificial pollination is necessary in the case of very early Marrows. Sow seeds singly in small pots for raising plants to put out in May, but apply no water to the roots until the seedlings appear above ground. A considerable degree of heat may be employed for raising the seedlings, and when the rough leaves have been formed transfer the plants to larger pots. Induce the plants to grow quickly, but gradually harden them off before planting them out.

Turnips.—Sow seeds of the variety Early Snowball once a fortnight in light, rich, and fairly firm soil. The drills should be made at 1 foot apart, and the seeds should be sown thinly in them. Afford frequent dustings with soot, and as the season advances choose different aspects for sowing the seeds, such as east, west, and north borders. The Turnip fly has been a plague here, and in spite of all remedies applied, until the last season, when by the use of a fine revolving sprayer for a few hours daily they were completely dispersed.

Coleworts are extremely useful in spring, autumn, and winter. Sow seeds now and again in June. A foot or so space between the plants will be quite sufficient, as they produce but small heads. The variety London Rosette is the best.

Winter Greens.—Seeds of varieties of Winter Greens should be sown thinly in drills drawn at distances of 12 inches apart, between which the hoe may be freely used. "Pricking out" of the plants will then be unnecessary. Use a fork when lifting the plants before they are planted in their permanent positions. Amongst the useful and beautiful varieties of Kale, Veitch's Exhibition and Carter's Welsh Kale should be included.

Chicory, Salsafy, and Scorzonera.—The ground prepared for Carrots is well suited for these plants, and seeds should be sown as recommended for Carrots.

Lettuce and Parsley.—Seeds of the Cabbage and Cos varieties having been sown early, and the seedlings pricked off in boxes and frames, plants have now been put out on sheltered borders, where light protection is afforded them. Plantations of Parsley are now being made from plants prepared in the same way. Seeds of Parsley have just been sown in well-prepared ground.

General Cropping.—Plant the garden generally with the object of securing for each crop its special requirements, keeping in view the general effect, and the best possible use to be made of the ground. To produce vegetables of the finest quality where space is limited intercropping has occasionally to be resorted to, and what may be termed a quick and a slow crop should be chosen to occupy the same ground without causing injury to either. For example, when planting Seakale or when making young beds of Asparagus, sow thinly between the lines seeds of Cabbage or of Cos Lettuce. The same applies to breadths of French Beans, and upon the ridges between the rows of celery, but in no case must overcrowding be allowed; for by the exclusion of light and air, quality and flavour are adversely affected.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Tuberous-rooted Begonias.—Tubers that have been stored during winter in a temperature of about 50° should now be put into boxes containing light rich soil and be afforded a moderate degree of heat. Young seedlings, whether of tuberous or fibrous-rooting varieties, require a temperature of 65°, and should be transplanted into boxes containing rich soil as soon as the plants require more space.

Hollyhocks, Carnations, &c.—Pots these plants, and place them in a warm frame for a few weeks.

Laying of Turf.—This work should be brought to a finish as soon as possible. Cut the turves of a uniform size and thickness. When they have been laid, work by means of a besom some fine soil into the interstices between the turves, and when the soil is in a suitable condition, beat and roll the whole surface.

Sowing Lawn Grass-seeds.—The ground will have been prepared in winter by removing the top soil, and levelling the rough subsoil to the desired formation. Then spread some finer and richer soil to the depth of about 9 ins. Be careful that the same quality of soil is applied throughout, or a patchy lawn will result. It is advisable to lay a verge of turf to define the edge. Tread and rake the soil to the proper level or slope, and leave it to settle for a short time before sowing the seeds, which should be done on a fine calm day during this month. Use a wooden rake to cover the seeds, and roll the surface afterwards at suitable intervals.

Senecio pulcher is a choice perennial plant bearing rosy-purple flowers. The plants flower late, and the best time to lift them is in autumn, when they should be removed to a cool-house, for planting-out in spring in a favourable situation. Afford the plants liberal treatment, and this may ward off the fungoid disease that attacks them. As this disease may spread from weeds in the vicinity, take care that no weeds are permitted to grow.

Incarvillea Delavayi is of easy culture, and flowers early in summer.

Tigridia pavonia requires a sunny spot sheltered from wind and well-drained, light soil, in which some well-rotted leaf-soil has been mixed. Let the bulbs be planted now, putting them 3 inches deep and 6 inches apart, and covering them with sand.

Cytisus, &c. — The species and varieties of Cytisus are useful plants for cultivation on steep banks and dry, sandy places, and may be easily raised from seeds. For producing immediate effect it is necessary to have a stock established in pots and ready for planting-out now. C. nigricans, C. biflorus, C. capitatus, are excellent; C. albus, C. scoparius, and C. s. Andreanus are all good, and flower in early summer. Genista ætnensis, and G. tinctoria var. elatior blooms later. G. anglica is a dwarf-growing species. Cytisus decumbens (prostrata) is a first-class trailing rockery plant; Spartium junceum (Genista juncea) is a favourite yellow-flowering shrub, and makes a good brave show on hillsides from July onwards; Genista hispanica, the evergreen Spanish Gorse, has conspicuously dense growth; Ulex nanus is also a desirable shrub. All the above species must be protected from rabbits.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Melons.—If the earliest plants obtained from seeds sown at the beginning of January have succeeded well, the fruits will shortly begin to change colour. Maintain the temperature at night at 70° or 75°, and close the house early in the afternoon, taking care to obtain plenty of atmospheric moisture until the fruits are actually changing colour, when the atmosphere should be kept slightly drier, with rather more ventilation on warm days. Gradually reduce the supply of water at the roots. Do not syringe the fruits, but do not allow the plants to become so dry as to cause the foliage to flag. Discontinue the use of liquid manures. Pot plants require most care at this stage, because sudden changes must be avoided, or the fruits will be deficient in colour and flavour. Sow seeds at intervals of about three weeks, or according to requirements, so that there will always be young plants in readiness for providing a succession. It is very necessary thoroughly to cleanse the house before setting out young plants and making up the bed, as advised in the Calendar on p. 119 in the issue for February 25. Only the top portion of the soil need be removed if there exists a proper control over the bottom-heat, and this is obtained from hot-water, but if fermenting materials have to be depended upon then fresh beds must be made.

Succession Plants.—Afford support by means of nets to the fruits of succession plants, and attend to the work of pinching and tying of the growths. Three fruits should now be allowed to mature on plants grown as cordons, planted at 1 foot apart, but four fruits may be allowed to plants growing at distances of 2 feet apart. Top-dress later plants after the fruits have set, and afford a light sprinkling of some approved quick-acting manure, also liberal supplies of liquid-manure from the farmyard, which is one of the best of all stimulants for Melon plants.

Melons in Frames.—The present is a good time to make preparations for growing Melons in pits or frames, when the frames have been cleared of early vegetables, &c. Let the hot-beds be composed of leaves and stable-litter about 4 feet deep. If good leaves are plentiful, use two parts of these to one of manure, as the heat will then be more lasting. On these beds make mounds of a compost of moderately heavy loam, wood-ashes, and a little bonemeal. This compost should be pressed firmly, in order to induce short-jointed growths in the plants. Set out one or two plants under each "light" in the frame as soon as the bottom-heat has declined to 85° or 90°. If strong, healthy young plants are not then ready sow seeds in the mounds. Cover the pits with mats at night to economise the heat. Afford a little ventilation early in the day when the weather is favourable. Take care to use slightly warmed water when syringing or watering the plants.

Tomatos.—The first trusses of fruit having set the plants may be treated more liberally by affording them applications of diluted liquid-manure from the farmyard, also an occasional sprinkling of Clay's Fertiliser. From the present time onwards the plants may be grown in any cool pit or house, provided they can be kept from cold and wet. Should white-fly make its appearance, fumigate the house lightly on one or two occasions. Avoid cultivating Tomato-plants in a very rich compost in the early stages, or strong and unfruitful growths will follow.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Strawberry Plantations. — Hoe the surface of the ground between the rows of plants, and remove all weeds. Slugs may be destroyed by applying a dressing of freshly-slaked lime or soot, repeating the application after a time if necessary, and before the beds are covered with litter. If large exhibition fruits are required a dressing of potash should be applied immediately the flower trusses appear, following this with another application when the fruit is swelling, Many of the artificial manures produce luxuriance of foliage only; these should never be given. Forced plants that have already fruited and which are intended for planting into beds for fruiting again in the autumn, should be hardened off in a cold frame, where they may remain until the end of the present month. Many growers use these early forced plants for planting their permanent beds, but a later batch of plants not so weakened by hard forcing is preferable and stronger for this purpose. If the ground has not been already prepared for planting it should be got ready at once by subjecting it to heavy manuring and trenching.

Alpine Strawberries and those of the Hautbois class can be raised from seed sown now, using boxes or pans for the purpose. When sown the seeds should be placed in a moderately warm frame, and as soon as the seedlings are sufficiently large and are considered hardy enough, "prick" them out on a shady border in the open, finally planting them in well-prepared ground. Plants raised from seeds sown last autumn will now be ready for pricking-out either into boxes or in frames. These when large enough should be planted in their permanent quarters, where they will ripen fruits this season. The variety St. Antoine de Padoue should receive a little bone-meal, which should be lightly forked into the surface soil between the rows. Allow but a small number of "runners" to remain on each plant; these will root and develop a crop of fruit this autumn, and be useful later for forming new plantations.

Arrears of Work should be made good without delay. Late-planted trees are best left unpruned until next season. All wall trees should be nailed or tied as the case may be. Old - established trees, which carried a heavy crop of fruit last year and which are now showing abundant blossoms, will be greatly benefited by copious applications of liquid-manure-water from the farmyard, or of diluted soapsuds from the laundry. The latter contain a large amount of potash. Roots growing quite near a wall, especially near those covered with a wide coping, seldom receive too much water. The soil between the trees should be lightly forked, and all parts of the fruit-garden should be made clean and tidy. Do not dig or plant crops at a distance of less than 3 feet from wall - trees, and allow a greater distance from the trees if the ground can be spared. The recent gales will probably have loosened some of the stakes supporting newly-planted trees. Make these firm, and see that none are rubbing the bark of the trees.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, APRIL 17 { Birmingham Mutual Improvement Society Meet.
TUESDAY, APR. 18 { Midland Auricula, and Midland Daffodil Society's Show at Birmingham Botanic Gardens
WEDNESDAY, APR. 19 { Royal Botanic Society's Show, Regent's Park.
Glamorgan Spring Flower Show.
Darlington Spring Flower Show.
Croydon and District Spring Flower Show.

SALES FOR THE WEEK.

MONDAY NEXT—
Hardy Border and Herbaceous Plants, Liliums, Stove and Greenhouse Plants, &c., at 67 and 68, Cheapside, E.C., at 12 o'clock.—440 cases Japanese Liliums, &c., at 3, by Protheroe & Morris.

TUESDAY NEXT—
Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.—Twenty-two acres of Narcissus and 3 acres Herbaceous Plants, at Hammond's Farm, West Horsley, near Guildford, by Protheroe & Morris, at 1.

WEDNESDAY NEXT—
The beneficial interest in the Lease and Goodwill of the Bedford Nursery, Haverstock Hill, N.W., Raphael *v.* Anderson, at the Mart, Tokenhouse Yard, E.C., by Mr. J. B. Slade (of Messrs. Protheroe & Morris), at 2 o'clock.—Palms, Plants, Roses, Hardy Border and Herbaceous Plants, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Azaleas, Palms, Roses, Lilies, Gladioli, &c., at Stevens' Rooms, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —48·7°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, April* 12 (6 P.M.): Max. 61°; Min. 45°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 13 (10 A.M.): Bar., 29·9; Temp., 62°. Dull, with occasional sunshine.
PROVINCES.—*Wednesday, April* 12 (6 P.M.): Max. 49°, Penzance; Min. 40°, N.W. of Ireland.

Dean Hole. "HORTICULTURAL TUESDAY" is a severe tax upon many of those whose business it is to attend the numerous Committee and other meetings which are held on that day in the new Horticultural Hall or elsewhere. The whole day is taken up by a succession of Committees from early morning till evening, and even later; and of these gatherings the ordinary visitor is usually quite ignorant. One of the meetings held on Tuesday last demands a special notice here by reason of its object. This was no other than the discussion of a proposal by the authorities of the National Rose Society to establish in connection with that Society a memorial to the late Dean HOLE, who presided over its destinies from its inception till his death. The proposal is not so belated as it appears to be, for although steps were taken immediately to commemorate the late Dean's services, it was soon felt that the proposals first made were inadequate, and that a larger scheme should be put forward for the acceptance of the Rose-loving public throughout the world. As the matter is still in the committee stage, we forbear from entering into details which may hereafter be modified. Suffice it to say that the Rev. J. H. PEMBERTON has drafted a scheme, the general principles of which were accepted by the Committee, and of which the particulars will soon be made public. The scheme is catholic in its scope. In its purview are included, with one important exception, everything or anything with which the Rose-grower is likely to be concerned. The exception is that whatever prize or prizes be awarded, they shall not be adjudged to any ordinary flower-show exhibit. The desire is to lift the HOLE memorial to a higher plane than that of the exhibition-table.

Dean HOLE's *Book of the Rose* is, after all, his best memorial, and we, in formulating our scheme, shall do well to bear in mind the broad, human sympathies which have caused that book to be the delight and companion of thousands of people who never visit a Rose show, and never read a gardening book of the ordinary character. An appeal will shortly be made to the rosarians of the world, and we doubt not that a suitable response will be forthcoming.

PELARGONIUM "CLORINDA," which forms the subject of our Supplementary Illustration in this issue, was exhibited by Messrs. CANNELL & SONS at the meeting of the Royal Horticultural Society on February 28, when it attracted considerable attention, and was generally regarded as an acquisition among useful garden plants. The plant, which belongs to the sweet-scented-leaved section, will flower the whole year round, and is as valuable for planting in the borders and beds in summer-time as it is for decorative purposes in the conservatory during the winter. The variety was raised by our old correspondent Dr. BONAVIA, of Worthing, who kindly sends us the following note regarding it:—"I began by pollinating the flowers of several Cape Pelargoniums with different pollens, and carefully ticketed every flower so pollinated with the names of the parents, but I did not obtain a single result. I grew tired of thus ticketing, and commenced to hybridise without making any record. As a result I found a single seed on Pelargonium quercifolium which resulted in this pretty variety "Clorinda"; so that the mother is P. quercifolium, but the father is not known. I was at the time using pollen of some zonal Pelargoniums, but nothing is certain as to the pollen parent. "Clorinda" is an Italian woman's name. This new Pelargonium has one interesting feature in that the flower umbels all open at the same time, and remain in good condition for a fortnight or more, but when cut and placed in water the petals begin to drop off within twenty-four hours. It is a fine trailer and a magnificent bloomer. *E. Bonavia.*"

THE ROYAL HORTICULTURAL SOCIETY.—We regretted to observe among the exhibits at the Royal Horticultural Society on Tuesday last, one completely out of character with a horticultural display, and though in itself unobjectionable yet highly incongruous. Such exhibits if permitted will decidedly vulgarise, lower the tone of the exhibitions, and disgust the legitimate exhibitors, as was, indeed, the case, as we have reason to know.

BOTANICAL MAGAZINE.—The plants figured in the April number are:—

Catasetum Christyanum, t. 8007; Reichenbach, in *Gardeners' Chronicle*, 1882, i., 588; 1895, ii., pp. 617, 618, fig. 104.

Derris albo-rubra, Hemsley, sp. nov., t. 8008.—An evergreen climber from China, belonging to the Leguminosæ. The leaves are unequally pinnate, with glabrous, oblong leaflets and long, axillary, drooping, many-flowered panicles. The short, cup-like calyx is of a red colour; the pea-shaped, fragrant corollas white, 5 to 6 lines long. It flowered profusely in the Palm-house at Kew. *D. Hancei* is also described by the same author under this heading.

Burbidgea schizostyla, t. 8009; Hackett in *Gardeners' Chronicle*, 1904, ii., 301.

Cotoneaster rotundifolia, Wallich, t. 8010.—Remarkable for its large, pear-shaped, pendulous, scarlet pomes. It is spoken of as specially desirable for winter decoration, as at Kew the "berries" survived the severe frosts and destructive fogs of the last season.

Pinanga maculata, Porte, t. 8011.—A low-growing (3½ feet) Palm, with tufted, slender, erect, jointed stems, bearing sheathing leaves near the top; each leaf oblong, deeply two-lobed to beyond the middle, light green marked with darker spots of the same colour. The small, reddish, globular flowers are thinly arranged on long, slender drooping spikes. Kew.

MONSTERA DELICIOSA: AN OFFER.—Our old and valued correspondent, Sir CHARLES STRICKLAND, writes that having a very large plant of this noble and edible fruited Aroid, for which no room can be spared, he would be glad to present portions of the plant to any of our readers who may desire to cultivate it. Sir CHAS. STRICKLAND's address is Hildenley, Malton.

"CASSELL'S POPULAR GARDENING."—Two volumes of this publication are awaiting our notice. During its appearance as a periodical we have previously mentioned this "illustrated cultural guide for amateur and professional gardeners," to whom it should prove exceedingly useful. Mr. WALTER P. WRIGHT is its Editor, and the letterpress is enlivened with coloured plates and many other illustrations. The publishers are CASSELL & Co., LTD., London, Paris, New York, and Melbourne, who are to be congratulated on the way in which the work has been brought to a completion.

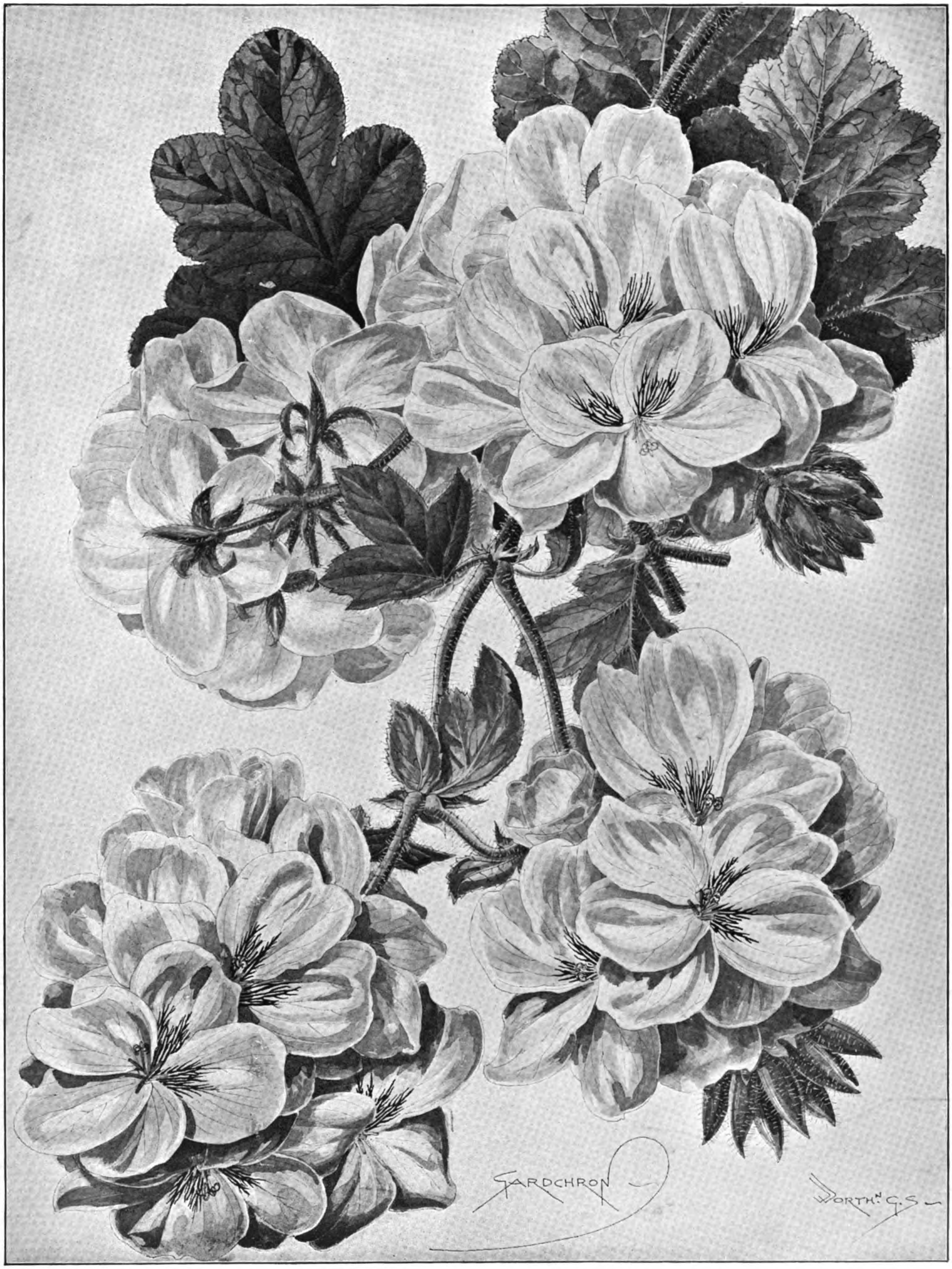
THE FRUIT INDUSTRY.—The Departmental Committee appointed by Lord ONSLOW to enquire into and report upon the Fruit Industry of Great Britain held sittings on the 5th and 6th inst. The Committee had again under their consideration the draft report prepared by the Chairman.

APPLES FROM THE CAPE.—We have received samples of Apples of high quality and in perfect condition, though lacking in colour. The Apples, so far as we can tell, appear to be different from any grown here. The average weight was between 11 and 12 oz., the flesh firm and of good flavour. If our Cape friends can send us Apples as good as these at the period when our own are practically over, they will be able to do good business in the market, for the samples sent were not only better, for the season, than our own, but are equal to the American and Canadian Apples in keeping qualities.

"SCHLICH'S MANUAL OF FORESTRY."—We note the issue (by Messrs. BRADBURY, AGNEW & Co., Ltd., 10, Bouverie Street), of a third revised edition of *Schlich's Manual of Forestry*, Vol. III., "Forest Management." Several additions have been made by the author, and these are duly explained by him in his preface. This is the standard work on the subject, and well worth the most careful study by the trained student.

APPLICATION OF SCIENTIFIC METHODS TO PRACTICE.—We hear so much of the activity of our American cousins as compared with our own inertness that it comes as a surprise to read the following extract from the *Louisiana Planter*—"We are sometimes disposed to think that our British West Indian *confrères* are a little slow in their sugar methods, and yet investigations have always shown that for decades the sugar planters of Barbados led the world so far as excellence in cane-culture was concerned; and the sugar planters of British Guiana led the world so far as excellence in the manufacture of sugar was concerned. If we are to maintain our leadership in the cane sugar industry, so far as its advancement along scientific lines is concerned, we shall need to be especially enterprising in the matter of our experimentation and ascertainment of the merits of seedling canes." The West Indies are under a great obligation to Sir DANIEL MORRIS for his successful efforts to apply scientific principles to practical work.

THE "ECKFORD" TESTIMONIAL.—We are informed that upwards of 250 shillings have been received. Further donations are requested, and may be sent to Mr. H. J. WRIGHT, 32, Dault Road, Wandsworth.



SCENTED-LEAVED PELARGONIUM "CLORINDA," A VARIETY RAISED BY DR. BONAVIA—
COLOUR OF FLOWERS DEEP ROSY-PINK.

GRAFTED AND UNGRAFTED VINES.—There are considerable differences, according to M. Curtel, in the *Comptes Rendus*, September 12, 1904, between the fruits of grafted and of ungrafted Vines. The bunches of a grafted Vine are larger, have more berries with less thick and less defined skins; the seeds are less numerous but larger. The more abundant juice is usually both more acid and more sugary; less rich in phosphates, more charged with nitrogenous matters, with less tannin and less deep colour; the colouring is also less stable.

LETTUCE.—In America it is computed that there are more than 300 varietal names, representing about 100 distinct varieties. Five hundred acres are annually planted in California alone for seed. Mr. Tracy, of the Bureau of Plant Industry of the United States Department of Agriculture, has published a valuable monograph of the Lettuces grown in America. The varieties are classed under the heads of 1, Cos; 2, Buttery; 3, Crisp. Further subdivisions are made according as the leaves are "self-closing" or "open," "cabbage-heading," and "bunching," and also according to size, period of maturity, habit, shape and colour of the individual leaves, colour of the seeds, conformation of the seedling plants, &c. Lists are given of particular varieties suited to different conditions and requirements. Analytical tables are given to facilitate the recognition of the varieties, followed by a detailed description of each admitted variety, with its synonyms; these descriptions are arranged alphabetically. A list of names, also in alphabetical sequence, is given. No fewer than twenty-seven plates are added, each devoted to the illustration of from two to five varieties. The Bulletin affords a good example of the scientific method with which our American cousins are treating all matters relating to commercial horticulture and agriculture. Application for copies should be made to the Bureau of Plant Industry, Washington, D.C.

LOOKING BACK.—The death of Mr. William Paul, writes Mr. R. Dean, recalls the fact that he was the sole surviving member of the large Committee of the National Floricultural Society, which was founded in 1851, and which remained in existence until 1858, when the formation of a Floral Committee by the Royal Horticultural Society rendered the existence of the National Society unnecessary. Mr. Paul was a member of the first Floral Committee of the Royal Horticultural Society, of which Mr. J. Jackson Blandy was chairman; and of the thirty-four gentlemen forming that Committee the only survivors are the Rev. H. H. D'Ombrain, Dr. Masters, and Mr. H. J. Veitch. Mr. Paul was one of the twenty-one original members of the Executive Committee of the International Horticultural Exhibition and Botanical Congress held at South Kensington in 1866, afterwards supplemented by the addition of Mr. Charles Lee and Mr. H. J. Veitch. Of that body only Mr. Edward Easton, Dr. Masters, and Mr. H. J. Veitch survive, with Mr. Richard Dean, the assistant-secretary; and they all appear in the photograph of the Executive Committee which was taken by Mr. Vernon Heath. In the middle of the last century, at the old nurseries at Cheshunt, the Hollyhock was largely grown, and new varieties were raised; while the Rose was extensively cultivated and new varieties produced. I can recall, too, says Mr. Dean, "the sharp competitions with Hyacinths and single Tulips in pots, forty to fifty years ago, between Mr. W. Paul and Messrs. W. Cutbush & Son. Hyacinths *were* grown in those days. One rarely if ever sees them now with the fine development of that remote period."

INTERNATIONAL CONGRESS OF HORTICULTURE AT LIÉGE.—We are informed that an international meeting for the discussion of matters of interest to horticulturists, both practical and scientific, will be held under the auspices of the United Horticultural Societies of Belgium at Liége, on the occasion of the Exhibition, May 8, 9, and 10, 1905. Those wishing to take part in same may obtain full particulars from the Secretary, Mons. Chas. Gonthier, 101, Rue de Statte, Huy, Belgium.

OVERSEA SUPPLIES: MARCH.—The *Board of Trade Returns* for the past month are again of a favourable nature. There is an increase in the value of imports as well as in volume, but a "boom" in exports. The situation is as follows:—Imports for March, £48,983,312: for the same period last year, £48,692,275; difference (increase), £291,037. The exports for the past month are valued at £28,070,823; for the corresponding period last year, £24,251,796—a difference of £3,819,027. Coming to the summary table of classified vegetable imports, we have the following totals:—

Imports: Description of Produce.	1904.	1905.	Difference.
	£	£	£
Class I. — Cereals, and other field crops — Wheat, Barley, Oats, &c.	6,352,359	6,846,996	+494,637
Class II.—All other food cultures — Tea, Coffee, Fruit, &c.	4,813,186	4,322,028	—491,158
Class III.—Used in manufactures — clothing, household goods, &c....	6,305,760	5,700,915	—604,845
Class IV. — Miscellaneous — including seeds, flowers, &c.	1,937,245	1,924,665	—12,580
Values of Produce...	19,408,550	18,794,604	—613,946

In connection with Class II. we have some items affecting Truffle cultivation, pointing to an increased oversea trade in this esculent. The Consul-General at Naples informs us that two Italian botanists (Prof. Mattei and Dr. Serra) have patented a mycelium which is to make the growing of Truffles an easy achievement and profitable. In cut flowers we have to note an increase of £3,377 in value, the figures for March being £50,637 against £47,260 for March, 1904. The influx of fruit from the Antipodes at the present season adds interest to our table of imports for March, as follows:—

Imports—March.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	238,826	156,666	—82,160
Apricots and Peaches	745	491	—254
Bananas	98,128	101,007	+2,879
Grapes	3,791	4,979	+1,188
Lemons...	32,593	31,464	—1,129
Nuts—Almonds ...	31,243	30,059	—1,184
Others used as fruit	42,552	51,996	+9,444
Oranges...	304,273	385,689	+81,416
Pears	2,659	1,254	—1,405
Plums	1,468	1,130	—338
Unenumerated ...	8,265	9,506	+1,241
Vegetables, raw—			
Onions ... ...bush.	100,112	85,286	—14,826
Potatos ... ... cwt.	250,750	27,257	—223,493
Tomatos ... ,,	76,079	102,745	+26,666
Unenumerated ,,	53,789	48,926	—4,863
Totals ...	1,245,273	1,038,455	—206,818

The arrivals of fruit from the Cape during the past month, as forwarded to us by the Union Castle Steamship Company, are as follows:—Plums, 2,948 cases; Pears, 2,098; Grapes, 4,224; Nectarines, 427; Peaches, 402; Tomatos, 14; Pineapples, 5; Apples, 61; Melons, 8; and Apricots, 1 case—a total of 10,183 packages. Of Raisins and Currants imported last month the record is £40,798—a gain of £24,854 over the same period last year.

FORESTS, WILD AND CULTIVATED. — Dr. Henry, who was unable to see a proof of our report of his lecture at the Horticultural Club, published on p. 221, writes us as follows:—"Tropical trees are characterised by slight branching, which is only carried out to the second or third order. Temperate trees, on the contrary, branch to the fifth, sixth, and seventh order, and show delicate sprays and thin terminal twigs, in great contrast to the coarse terminal twigs of many tropical trees. The exact height of the Quercus Ilex mentioned is 86 feet. The Pinus insignis referred to is 95 feet high, with a girth of stem of 14 feet 4 inches. The biggest specimen of Hornbeam occurs in Co. Kerry. In describing French forestry, 'bush' stage is not the correct term, 'thicket' stage is better, referring to the period when young trees are growing thickly together, and have not begun to 'clean' their stems. The paragraph regarding my criticism on forestry in this country and picturesque old Oaks conveys a wrong impression of what I intended to say. I advocated planting in large masses, not in thin belts, and attention to the forest soil, and I did not consider decaying and diseased old trees, with which there were no historical associations, picturesque in the least. Many old Oaks in sound condition are very picturesque."

SEEDSMAN AS HIGH SHERIFF.—Many of our readers will be interested to learn that Mr. Edward Webb, of the firm of Edward Webb & Sons, Wordsley, Stourbridge, has been appointed High Sheriff of the County of Worcester.

"GARDEN-COLOUR."—We have received from Messrs. Dent & Co. a copy of a work under this title, consisting of water-colour sketches by Miss Margaret Waterfield, with descriptive notes by Mrs. C. W. Earle, E. V. B., Rose Kingsley, and the Hon. Vicary Gibbs, etc., etc., the "etc., etc." including an article on "Rose Culture" by Mr. Mount. We shall take an early opportunity of adverting to this interesting volume. The price of the book is 21*s*.

SPRING FLOWERS AT BELVOIR CASTLE.—Our correspondent, Mr. W. H. Divers, informs us that the recent cold weather will delay some of the spring flowers considerably, but has done them no serious injury. Hyacinths, Polyanthus, Aubrietias in variety, Arabis, and many others are commencing to bloom. The best time to see the full display will be during the last week of April and the first week in May. We may add that the flower gardens are open to the public daily without charge.

PUBLICATIONS RECEIVED.—*Transactions and Proceedings of the Botanical Society of Edinburgh.* Session 68. Contents: Drosera bulbigena from W. Australia, by Dr. Morrison. Preliminary Report on the Batony of Captain Dowding's Colombian Expedition, by T. Sprague. Botanical Visit to the Balearic Islands, by J. White. Origin of Lenticels (with illustration), by J. A. Terras. Notes from the Royal Botanic Garden, Edinburgh, February.—*History of the Garden and Principal Gardener; Science and Practice of Horticulture. Farmer's Handbook*, by Thomas Jamieson, Director of the Aberdeenshire Agricultural Research Association. A record, fully illustrated, of Experiments and Observations made by the Association from 1875 to 1903. The conclusions, carefully sought and fully verified, seem justly entitled to command the confidence of farmers and to prove of valuable assistance to them.—From Cambridge University Department of Agriculture, Farmers' Bulletin, No. 3: *The Potato Crop*. Report on Experiments conducted at Burgoyne's (Univerity) Farm in 1903 and 1904. The best of the newer main crops was Dobbie's Factor, the best new second early was Findlay's Royal Kidney, the Potatos most disease-resisting were Sutton's Discovery and Findlay's Evergood. The value of a change of seed must depend on the conditions of growth of the particular sets, and no general conclusions are attempted.—From the same University: *The Improvement of Poor Pastures*. Report on an experiment at Cransley, Northamptonshire, 1901 3. Basic slag proved valuable as favouring the growth of Clover. "When the farmer begins improving his land he must think only of the Clovers, and the whole plan of manuring must be designed to encourage them.—Also from Cambridge: *Report on Experiments carried out at Bramford and Saxmundham by the East Suffolk Education Committee*. The experiments dealt with soil improvement and management of pastures.—From the County Council for the County Palatine of Lancaster, Education Committee, Agricultural Department: *An Experiment on Manuring Potatos and on Planting*

Potatos at Different Distances apart. In the latter trials it was found that for large, free-growing and late varieties of Potatos the best distance apart for planting the seed was from 18 to 24 inches.—Technical Instruction under the Worcestershire County Council: *Reports of the Experimental Garden, Droitwich, and the County Instruction Gardens for* 1904.—*Bird Notes and News*, April.—From the Imperial Department of Agriculture for the West Indies: *Seedling and other Canes in the Leeward Islands.*—*The Queensland Agricultural Journal*, February. Contents: Grafting the Mango, by D. O'Connor; Contributions to the Flora of Queensland, F. M. Bailey; General Notes on Stock, &c.—*The Agricultural Gazette of New South Wales*, February. Contents: Myall Creek Estate, Information for Persons desirous of obtaining Land, Orchard, Dairy and Stock Notes, &c.—*The Agricultural Journal of the Cape of Good Hope*, March. Contents: Extra-tropical Forestry (illustrated), by D. E. Hutchins; Irrigation in the N.W., Destruction of Locusts, by C. W. Mally; Salt Bushes (illustrated), by Dr. Nobbs.—*Annual Report of the Secretary for Agriculture, Nova Scotia*, 1904. The season was not generally favourable for crops. The growth of agricultural societies and of their work was marvellous. The unfavourable season has not discouraged growers as it succeeded several more prosperous years.—*The Indian Forester*, January. Contents: Forests of Eucalyptus marginata, by Dr. Deils; Lumber Industry of Lake Huron, by Col. G. F. Pearson; Madras Forest Members' Tour in Anantapur; also, on a separate leaflet, Water-yielding Plants found in the Thana Forests, by G. M. Ryan.—*The History and Culture of Grafted Roses for Forcing*, by Alexander Montgomery. Reprinted from the *Florists' Review* (Chicago).—College of Agriculture Agricultural Experiment Station, University of California: *Commercial Fertilizers*, by George Roberts.—From the Librairie Horticole, Rue de Grenelle, 84 bis, Paris, come the following useful pamphlets: *Les Peupliers*, Espèces, multiplication, culture, exposition, maladies, ventes, usages, par J. Beaumont.—*Les Plantes Alimentaires Indigènes*, par Georges Gibault; and *Les Plantes Médicinales Indigènes leur utilisation dans la médicine populaire*, par G. Gibault et J. Bouyssous.—*Les Œillets, culture des Œillets à la grand fleur*, par S. Mottet (2nd edition).—*L'Ornementation Florale des Jardins*, par Albert Maumené. Revue descriptive et analytique de l'Ornementation estivale des Jardins publics de Paris, en 1904, &c. Avec 65 figures.—*Flore Descriptive et Illustrée de la France*, par l'Abbé H. Coste. Tome 3me., Fasc, 3, avec figures 3159—3343.—*Le Chrysanthème*. March. Contents: Notes on new Chrysanthemums, List of varieties cultivated in France during 1905 (continued), &c.—*Queen-rearing in England, and Notes on a Scent-producing Organ in the Worker-Bee; the Honey-Bees of India and Enemies of the Bees in South Africa.* By F. W. Sladen. A useful illustrated pamphlet by a well-known authority.—*Agricultural Bulletin of the Straits and Federated Malay States*, January. Edited by H. N. Ridley. Contents: Planting Para Rubber in Johore, R. W. Burgess; Mangrove Swamps in the Federated States, H. Furnivall; Casuarina equisetifolia, its Cultivation and Treatment, R. D. Hudson, &c.—*Proceedings of the Agri-Horticultural Society of Madras*, October to December, 1904. Contents: Agave Poling, Agave Fibre Experiments, &c.—*Report of the Conservator of Forests, Natal*, January 1903 to June 1904. The work done includes the entire reconstruction of the Forest Service, Demarcation of 15,904 acres of best forests, and inspection of most of the forests, nursery work, construction of arboretum, &c.—*Bulletin du Jardin Impérial Botanique de St. Petersbourg*, Tome V., Livraison 1. Contents: Lettres de Voyage, M. B. Fedtschenko; Frage des Polymorphismus von Evernia furfuracea, M. Elenkin; Nouvelles espéces de la flore du Turkestan, M. Fedtschenko.—From the Central Experimental Farm, Ottawa, Canada: *Results obtained in* 1904 *from Trial Plots of Grain, Fodder Corn, Field Roots, and Potatos*, by William Saunders and C. E. Saunders (Bulletin No. 48).

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

"THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—The remarks of a "A Fellow" in your issue of March 4 in my opinion demand an expression of opinion on the other side, as I cannot help thinking that they are dictated from a very narrow point of view. If it were true that not one Fellow in a thousand is able to read the Journal through, so much the worse for the immense majority implied. I venture to think that the assumption that only eight or nine Fellows in all, for that is the logical deduction, not only study it thoroughly, but appreciate it greatly, is a gross reflection upon the body generally. The Journal represents as far as practicable a record both of "up-to-date" horticultural knowledge and of the proceedings of the Society and its Committees, hence it is bound to deal with many branches, and every specialist is entitled to expect to find his particular cult represented, not merely in a condensed form, but *in extenso* with full details. This need being met, it of course results that outsiders, so to speak, that is, Fellows without any special cult of their own, may find much of the matter uninteresting, but it by no means follows that the Journal should be brought down to their level. It can only be such who object to the Journal on the score of its bulk, while I am sure there are very many of the other class who hold entirely opposite views, and regard it as a rich mine of information of the right kind throughout, and consequently recognise with gratitude the immense amount of labour and pains devoted to its publication by its editor, the Rev. W. Wilks. It is not usual to complain of getting too much for one's money, but this is practically what "A Fellow" does, and I am glad that I am not the only one to enter a protest against his views as expressed, since if they were adopted I and many others would be much the poorer. The cost of the recent issue was naturally increased by its special character as a centennial record, as well as one of nearly a year's work; it is absurd to multiply this by three to estimate the cost of three ordinary issues dealing with shorter periods. Neither does it follow at all that the £1,200 mentioned in the balance-sheet relates to this issue alone. The only point in which I agree to some extent with "A Fellow" is with regard to the uncut issue. Many, I think, in these busy days would prefer a cut one, but as the bibliophile differs from this view for æsthetic reasons, perhaps it might be possible to meet both views by issue of cut (guillotined) copies to such Fellows as expressed a desire for such to the Secretary. *Chas. T. Druery, V.M.H., F.L.S.* [When some time since we took the opinion of our subscribers on the question of whether our own pages should be issued "cut" or "uncut," an overwhelming majority expressed their opinions in favour of the "guillotine," and this in spite of the greatly superior appearance of the uncut copies. ED.]

ARRANGEMENTS AT THE ROYAL HORTICULTURAL SOCIETY.—In the case of the Hon. J. H. Turner's lecture at a recent meeting of the Royal Horticutural Society I think some of the audience did not show the respect to the lecturer that he deserved for so interesting a lecture and the lantern-slides he exhibited. Almost before he had finished there was a quite a stampede to get out. I think the Chairman should have inquired if any-one wanted to ask any questions, before moving a vote of thanks to the lecturer. Would it not be advisable to have more lights on the stairs from the lecture-room and the lower regions, which were quite in darkness at 8 P.M.? *John Carvile, F.R.H.S.* [The publication of this letter has been unavoidably delayed, but it is still applicable. It would be an improvement if the lecture table were placed at the opposite end of the room. Those who wish to leave could then do so without disturbing the lecturer. ED.]

ANTI-DRIP APPLIANCES.—We have been greatly interested in this correspondence, and are surprised that so many gardeners adopt a construction that gives them so much trouble. The anti-drip bar adopted in all our constructions, and referred to by more than one of your correspondents, overcomes the disadvantages and inconvenience caused by drip. We agree that its application to existing houses is a difficult matter, but we cannot understand why so many seem to prefer patching-up a defective rafter than the adoption of the right system in the first instance; a good article at the outset is the cheapest in the long run. *Foster & Pearson, Beeston, Notts.*

MANURE FOR PEACH-TREES.—I read with much interest Mr. C. W. Muir's answer to "A Reader" on p. 202. I cannot agree with Mr. Muir in applying manure-water to Peach-trees all the year round. Peach-trees certainly require a period of rest, and the roots are not so active in winter as many gardeners maintain. During the winter months many Peach-borders are made sour and sodden and their value destroyed for the coming season by applying manure-water when there is not enough root action to absorb the same. When the tree is in full growth I should even then be careful when applying manure-water, and would make a close examination of this or that particular tree, and apply the manure-water as my observation would direct. I am a firm believer in the value of manure-water; but I fear there is much harm done in many cases by want of discretion when the liquid is applied. It is a common thing in many gardens to have set days for feeding Peach-houses and Vineries. In the case of a large Peach-house, where there are many trees and also many varieties, the observant gardener will see the necessity of using his discretion when applying the stimulant. Would Mr. Muir apply manure-water to a healthy tree bearing no fruit, in the expectation of building-up a good constitution for obtaining the desired crop in the following year? I am afraid his labour would be in vain. I believe in keeping the surface of Peach borders well forked, and not allowing them to become hard. Of course care must be taken not to destroy the roots in forking. This practice helps to keep the border sweet, and at the same time admits warmth, which is so beneficial to Peach roots. *W. Campbell, Brahan Castle Gardens, Canonbridge.*

PEACH BUD DROPPING.—For a number of years back much has been written on Peach bud dropping, and from the numerous articles that have recently appeared in the *Gardeners' Chronicle* it is clear that the real cause is not yet understood. Many years ago, when the *Scottish Gardener* was in circulation, a gardener of good standing and a frequent writer in the gardening press expressed the opinion that the cause arose from the Peach-house being filled all the autumn with Chrysanthemums, but beyond this he gave little or no further explanation as to how he accounted for the Chrysanthemums affecting the buds in such a way as to cause them to drop. Recently another writer stated that the watering of the plants in the Peach-house with manure-water (the water from the plants getting into the border) was probably the reason. Then another contributor asserted that dryness at the roots was not the cause. Let us consider what goes on outside in nature. To the shrewd and the intelligent this is an acceptable guide to go by in all matters relating to cultivation under glass. We never hear of Peach buds dropping off trees cultivated out-of-doors; and why is this? Just because the trees are fully exposed to all weathers, and when they are at rest and leafless they have most wet both at root and top. This fact of itself should be convincing proof that the course adopted in cultivating Peach-trees under glass is evidently not in accordance with their natural requirements. Dryness at the roots and a dry atmosphere together are the source of this species of bud-dropping. The Peach-house filled with Chrysanthemums all the autumn and well into the winter has to do with it, inasmuch as there are no proper means of getting the borders thoroughly moistened so as to preserve the roots of the trees in that plump fresh state they should be in to keep them all alive and in health. The pipes having to be kept warm to keep a circulation of dry air among the plants to preserve the Chrysanthemum blooms from damping, the soil becomes dry immediately about where the principal feeding roots are, and before this dryness is discovered great injury to the roots may happen. Suppose the surface of the border may seem wet, this is no evidence that the soil is sufficiently wet underneath. It should be borne in mind that the fibrous roots, that are so fine that they can scarcely be seen by the naked eye, are the main feeders, absorbing the watery elements from the soil. Now if the soil is dry, this process of absorption cannot go on, hence the whole energies of the tree flag from contraction. It would be rather out of place to syringe Peach-trees indoors through the winter; still, to do so, the trees would be getting nothing more in the way of moisture than the trees outside get. The bark of the tree is a breathing organ, and the plump, fresh state of the buds is much impaired by any obstruction to breathing, whether from drought or other cause; and when in this state the buds part readily from their setting in the branches. Hence Peach-bud dropping. *Andrew Kemp, Coolhurst Gardens, Horsham.*

POTATO PLANTING.—Mr. Jefferies' statement on p. 218 respecting his somewhat different method of planting Potatos to that recommended by me occasions no surprise, because, roughly speaking, out of something like 200 allotments cultivated by *employés* upon this estate, and within a mile radius of these gardens, I question if ten could be found who do the work of planting with any marked degree of similarity. Yet, like those obtained by Mr. Jefferies and myself, the general results are fairly satisfactory. The use of the dibber, however, has been discontinued in-ninety-nine cases out of the hundred. It is more than thirty years since I used the dibber as described by Mr. Jefferies, and I have no intention of re-introducing that instrument to these gardens. Mr. Jefferies' letter tends to show how astonishingly the Potato can adapt itself to the treatment accorded it. "Trouble" is a wrong word to apply to work done properly. *W. Fyfe.*

CARBOLIC ACID AS A REMEDY FOR "SPOT" IN CUCUMBERS (CERCOSPORA MELONIS).—Carbolic acid (phenol) has valuable germicidal properties, but it is usually believed to be only a mild fungicide. At Swanley Horticultural College the present head gardener is a thoroughly good, practical man, although without any scientific pretensions. His general cultural methods are so excellent that the plants under his care have the best opportunities to resist disease and pests. They are therefore to a great extent immune, and when attacked a somewhat mild preventive or remedy is sufficient to quite turn the balance in their favour. The special remedy or rather preventive [for Cucumber "spot"] is a mixture of the contents of a pint bottle of No. 5 Calvert's carbolic acid with 5 quarts of water. The path of the house is watered with this mixture just before shutting up the house in the evening. Last Wednesday (April 5) a house, 1200 cubic feet, containing Cucumber plants 3 to 4 feet high, was treated with a quarter of a pint of the fluid mixed with one quart of water. I was in this house at 3.30 P.M. on Thursday, and again at 4.30 P.M. on Friday in last week. Even on Friday the odour was very unpleasantly strong, yet no ill effect whatever could be detected on the plants. I was informed that some seedlings which were intentionally placed in contact with the solution had been killed. This damping is done weekly as a preventive, but the mixture is applied at about one-half the strength described above. Some houses have been weekly sprayed with liver-of-sulphur (K_2S), 1 ounce to 2½ galls. of water; but it is believed that the carbolic acid is the better method. Anyhow, since above treatment has been adopted, "spot" has been practically absent. When, however, any indications have appeared, the affected parts have been removed and burned, and the preventive measures adopted. Probably good cultural methods are largely the cause of the immunity from disease, but the treatment is worthy of trial, although nothing can rectify the ill effects of persistent bad culture. *F. J. B.*

—— May I take the opportunity of answering through your columns the numerous enquiries I have received regarding the proper quantity of carbolic acid to use for houses of different cubic capacities. For a house of 4,000 cubic feet I have found ½-pint of carbolic do very well. A stronger dose could only be applied to plants which are very sturdy and robust. After the house has been treated to the first application, if upon a close inspection twenty-four hours later the spot continues to spread, then give another application slightly weaker than the first. This should be continued if the spot has got a firm hold, but if it is taken in time one application should prove sufficient. As a preventive a slightly weaker solution could be used about once a week during the cropping season. On the morning following the application let the plants be syringed vigorously with plain water. *Jas. Lawson, Head Gardener, Swanley Hort. College.*

MARKET GROWERS' DAFFODILS.—What is the use of raising a "Peter Barr" Daffodil when in twenty years' time a coster in the streets of London will sell twelve of its blooms for 2*d.*? The aim of growers and raisers of new sorts should be to try and provide for the public taste, and give the many an early-flowering one. Size does not matter much with the West-end florist if he can give his customer a bloom for 6*d.* in November and December. *An Irish Grower.*

APPLE LORD BURGHLEY.—I have grown this Apple for many years, but beyond its late-keeping qualities there is little to say in its favour. At the time when I read Mr. Easter's note in the *Gardeners' Chronicle* I had just received some very fine specimens of this Apple from a gardener in the Eastern Counties famed for his hardy fruit culture. In view of Mr. Easter's note I took a deep interest in tasting the specimens received. The fruit was of full size, and especially well coloured. I found the flesh hard, and the flavour was comparable to that of uncooked Rhubarb! *E. M., South Hants.*

DISEASED JAPANESE LARCH.—On p. 209 of the *Gardeners' Chronicle* Mr. Simpson made some interesting remarks on the Japanese Larch. While agreeing with Mr. Simpson that diseased examples are difficult to find, still they are to be discovered. Quite recently I was one of a party which had the pleasure of inspecting some of the plantations on the Dunkeld estate of the Duke of Atholl. Among the many interesting objects to be seen was a thriving plantation about ten years old, which, with the exception of half a dozen trees of the common Larch, was entirely composed of the Japanese variety. In one part of this plantation we found a considerable number of diseased trees. I myself counted seven or eight within a radius of 20 yards. This is the first occasion on which I have seen disease on Japanese Larch, but if foresters persist in mixing it with common Larch I fail to see how it can escape. One great objection to the Japanese Larch in this district is the frequency with which it loses its leader. *C. McDonald, Methven, Perth.*

PINUS INSIGNIS.—We have some trees here which were planted eighteen years ago, and they measure 5, 6, and 7 feet round the base of stem. Is this a satisfactory growth? *Ireland.*

LAW NOTE.

PECULIAR POINT UNDER THE MARKET GARDENERS' ACT.

At Brentford County Court recently, before his Honour Judge Shortt, K.C., an arbitration under the Agricultural Holdings and Market Gardeners' Acts was heard, in which John Smith, of Chiswick, was claimant, and his Grace the Duke of Devonshire respondent.

The matter came before the Court by way of points of law raised in the award of the umpire between the parties. Mr. Bremner, in dealing with the special case, stated that the claimant, since 1888, was a tenant of 235 acres of market-garden land at Chiswick under leases of 1888 and 1899 from the Duke of Devonshire, and he claimed compensation under the Market Gardeners' Act of 1895 in respect of valuable improvements made upon the devised land by planting and setting out of fruit-trees. The leases had some years to run, but the landlord reserved the power to resume possession of the land, and he had exercised that power. The leases provided for certain allowances being made to the tenant, and by a clause in each there was to be no allowance or compensation for improvements. The arbitrator had found certain amounts due to the claimant under the leases, but added that he would be entitled to a great deal more if he could avail himself of the benefits of the Act of 1895. Counsel contended that this Act superseded all prior leases, and there could be no power to contract out of it, that the respondent had not, as he should have done, exercised his power of dissent to any improvements, and that therefore, notwithstanding the leases, the claimant was entitled to come in and receive compensation according to the scale which the enactment granted.

For the respondent it was urged that the claimant could not be paid twice over for compensation. He had already received some under his lease, and he was barred therefore from coming in under the Act.

Mr. Bremner replied that the lease was made under the Agricultural Holdings Act of 1883, but this was over-ridden by the Act of 1895, and any leases were subject to the latter Act.

His Honour reserved judgment. The point, he believed, was an entirely new one under the Act of 1895, and he should have to look very closely into it, because it must have a very important bearing on leases of market-gardens.

On Friday, April 7, the Judge delivered judgment as follows:—

His Honour said that the leases were explicit, and so also was the Act of 1895. But he considered the applicant could not claim under both, and as he had made a claim under the leases and received an award, he could not attempt to come in under the Act. He therefore found for the respondent with costs. As the point was new, he gave leave to appeal if necessary.

SOCIETIES.

THE ROYAL HORTICULTURAL.

April 11.—The usual fortnightly meeting of the Committees was held on the above date in the new Hall in Vincent Square, when a very large display of exhibits was made.

The Orchid Committee recommended two First-class Certificates and five Awards of Merit.

The Floral Committee recommended six Awards of Merit, and among the numerous groups and displays was one by Messrs. Cutbush & Sons, of a large rockery planted with Alpine plants. This was carried out on a scale such as is seldom seen at merely temporary exhibitions, and a Gold Medal was appropriately awarded to the exhibitors.

The Fruit and Vegetable Committee recommended a First-class Certificate to Potato "Syon House."

The Narcissus Committee recommended one First-class Certificate and two Awards of Merit.

At the meeting of the Scientific Committee some letters were read on the subject of deterioration of Potatos. These are printed below.

At the general meeting of Fellows, a number of candidates were elected as Fellows, and a lecture on "Retarded Potatos" was read by Mr. T. J. Powell, Park Place Gardens, Henley-on-Thames.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Jno. Green, W. Bain, R. Hooper Pearson, Jno. Jennings, J. F. McLeod, H. J. Cutbush, J. W. Barr, W. Howe, Chas. Dixon, Chas. Jeffries, R. C. Notcutt, Chas. E. Pearson, W. Cuthbertson, C. E. Shea, W. P. Thomson, E. H. Jenkins, M. J. James, Ed. Mawley, E. T. Cook, R. W. Wallace, and George Paul.

Messrs. Wm. Cutbush & Sons, Highgate, London, N., showed what appeared to be a large portion of a well-arranged rockery, the representation being admirable, and one of the best displays ever attempted with this class of plants. The background was high, and was furnished with Conifers, hardy flowering shrubs, climbers on rustic branches, Magnolias, &c., while numbers of "pockets" arranged throughout the exhibit were furnished with many kinds of alpine and hardy plants in season. A bog and water-garden found a site near the front portion of the display, furnished with suitable subjects, Marsh Marigolds, Irises, Aponogeton distachyon, &c. Hardy Orchids were a feature in the display, Cypripedium spectabile, C. acaule, C. Calceolus, C. debile, Calanthe discolor, Bletia hyacinthina, &c. Primulas were represented in numerous species, while hardy Ferns were interspersed among the group in many favourable positions. Aubrietias, Anemones, Liliums, Hepaticas, Ranunculus, Saxifrages, Veronicas, and a host of similar subjects were to be seen in flower, and the whole arrangement was executed on a well-designed plan (Gold Medal).

Messrs. Cutbush also displayed on an adjacent table a collection of Ericas.

Messrs. R. & G. Cuthbert, Southgate, Middlesex, put up one of the showiest groups in the Hall in the form of a collection of forced flowered shrubs and other plants. This was a strikingly bright exhibit, and one that was much admired. The group included Lilacs, Wistarias, and species of Ribes, Prunus and Pyrus, Laburnums, Spiræas, Azaleas, &c. A batch of species and varieties of Magnolia in the centre of the display was magnificent. Maples, Ferns, and other foliage plants increased the effect, and the manner of arrangement was all that could be desired (Silver-gilt Flora Medal).

Messrs. B. S. Williams & Son, Upper Holloway, London, N., displayed a large group of forced shrubs, &c., Azaleas, Lilacs, Ribes, Gueldre Roses, and other plants that are utilised for early forcing (Silver Banksian Medal).

Sir Trevor Lawrence, Burford, Dorking (gr., Mr. Bain), staged a group of Anthuriums, mainly improved forms of A. Scherzerianum. Many of the spathes were of rich scarlet colour and of large size, varying in shape from linear to ovate. Other plants carried spotted bracts, the groundwork being white with splashes of red. A few plants of A. Andreanum were included in the group (Silver-gilt Flora Medal).

H. L. Bischoffsheim, Esq., Stanmore, Middlesex (gr., Mr. C. J. Ellis), also displayed a number of plants of Anthurium Scherzerianum. The flowers made a pretty display, and were pleasingly set off by Ferns, Panicum plicatum, Palms, &c. (Silver Flora Medal).

Mr. Geo. Mount, The Rose Nurseries, Canterbury, displayed a superb collection of cut Roses. There were large groups of the varieties Frau Karl Druschki, Mrs. John Laing, Catherine Mermet, Ben Cant, and Ulrich Brunner staged in vases and boxes, every flower a specimen, while other boxes contained numerous miscellaneous varieties, all excellently shown Silver-gilt Flora Medal).

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, contributed an extensive exhibit of Ferns and Begonias. The Ferns were nearly all specimen plants of rare and choice species, while the Begonias were of the Rex type, small plants in 60 pots, and well adapted for decorative purposes (Silver Flora Medal).

Sir F. T. Barry, Bart., M.P., St. Leonard's Hill, Windsor, Berks (gr., Mr. Robert Brown), sent a remarkable collection of Camellia flowers cut from plants growing in the open-air. Many varieties were included (Silver Banksian Medal).

Messrs. H. Cannell & Sons, Swanley, Kent, displayed an extensive collection of Zonal Pelargonium flowers in vases, similar to those staged by them at the two previous meetings. A few "show," varieties were included. Messrs. Cannell also exhibited a choice collection of Cacti, among which Mammillaria Stella-aurata was shown in flower (Silver Flora Medal).

Mr. A. F. Dutton, Iver, Bucks, exhibited vases of cut Carnations, principally of the "Tree" varieties. The flowers were excellent examples, rich in colour, large in size, and of good form, and included some of the best varieties. An imposing batch of the soft blush-coloured variety Enchantress occupied the central position, the flowers being as large as those of the "Malmaison" type. Other varieties included Mrs. Thos. W. Lawson, Flamingo, Lady Bountiful, Fair Maid, Melba, and Harlowarden (see Awards) (Silver-gilt Banksian Medal).

Messrs. Gilbert & Sons, Bourne, Lincolnshire, showed a pretty exhibit of Anemones very similar to their group of these flowers shown at the last meeting. Many types and species were shown, including the lovely A. Pulsatilla, the pleasing St. Brigid varieties in many colours, the delicate A. apennina of the purest blue colour, grand specimens of A. fulgens, &c.

Sir A. Harmsworth, Bart., Sutton Place, Guildford (gr., Mr. J. Goatley), set up a large group of Cinerarias of the "stellata" type. The plants were staged on the floor of the hall, and were arranged so as to slope from the back to the front, which was edged with decorative plants (Silver-gilt Banksian Medal).

Messrs. Jas. Veitch & Sons, Ltd., Chelsea, exhibited a mixed collection of plants—pans containing well-flowered examples of Corydalis Wilsoni (see *Gardeners' Chronicle*, May 14, 1894), also a plant in flower of Tillandsia Lindeni with its rich blue flowers, Crowea angustifolia, Clerodendron myrmecophilum, Pentapterygium (Vaccinium) serpens, and a batch of Gloneria asminiflora. Messrs. Veitch & Sons also showed a beautiful batch of Xanthoceras sorbifolia, and one of Hydrangea Hortensia, with flowers of a very pronounced blue colour. Adjoining the latter were plants of Azalea (Rhododendron) Yodogama, Amygdalus persica, with double pink flowers; Cerasus pseudo-Cerasus "J. H. Veitch," profusely flowered; the new Senecio auriculatissimus, &c. (Silver Banksian Medal).

Messrs. John Peed & Sons, Roupell Park Nurseries, Roupell Park, exhibited a light-coloured Caladium named Golden King.

F. A. Bevan, Esq., Trent Park, New Barnet (gr., Mr. Parr), staged a batch of a light rosy-coloured Verbena with fragrant flowers, also greenhouse plants, Anthurium Scherzerianum, Begonia Rex, Palms, &c.

Mr. Richard Anker. Addison Nursery, Napier Road, Kensington, brought tiny Ericas and Rhododendrons flowering in miniature pots, &c. The same firm also showed a batch of pot plants of Myrtles.

Messrs. Dobbie & Co., Nurserymen, Rothesay, Scotland, exhibited a collection of Pansy and Viola flowers. The Violas were displayed in vases arranged on a staging, while the Pansies were exhibited on boards and with paper collars. Several new seedling varieties were shown among the Violas: Lizzie Storer (dark purple with upper petals shading to light heliotrope); Mrs. Lindsay (white with a violet edge), Effie (white ground with purple rays and edge). Emmie Bateman is a new Pansy of large size; Mrs. Campbell has an edging of deep rich yellow colour (Silver Banksian Medal).

Mr. Jas. Douglas, Edenside, Great Bookham, Surrey, brought two dozen Auriculas. The plants were of first-class quality, and included several seedlings, to three of which awards were granted.

Mr. John R. Box, West Wickham, Kent, put up an imposing exhibit of plants of Begonia Gloire de Sceaux. The plants were trained as pyramids, and all were carrying a profusion of flowers.

Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, exhibited alpine plants, including Fritillaria pudica, F. armena rubra, Trillium sessile, Tulipa Clusiana, &c. (Silver Banksian Medal).

The Misses Hopkins, Mere, Knutsford, Cheshire, displayed a small collection of alpine plants.

Messrs. John Peed & Sons, West Norwood, London, also staged alpine and hardy plants in pans and boxes. Anemone apennina was shown well.

Messrs. Jackman & Son, Woking, in addition to showing flowers of Narcissus, had also alpine and hardy plants in flower. Prominent features were Euphorbia Wulfeni, varieties of Primula Sieboldi, &c.

Messrs. T. S. Ware, Ltd. (1902), had an exhibit, in which Primula Sieboldi was again the most noticeable constituent.

Mr. G. Reuthe, Keston, Kent, showed some excellent flowers of Rhododendron Thompsonianum, cut from the open garden, also flowers of Camellia reticulata; and among plants in pots several species of terrestrial Orchids, Erythoniums, &c.

Messrs. W. & J. Brown, Peterborough and Stamford, exhibited Dimorphotheca Eckloni, Verbena Miss Willmott, Rose Dorothy Perkins, &c., all flowering in pots.

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, exhibited cut flowers of varieties of Carnations, including Coronation, Flamingo, America, Mrs. T. W. Lawson, &c., and varieties of the "Souvenir de la Malmaison" type (Silver Banksian Medal).

Mr. S. Mortimer, Rowledge Nurseries, Farnham, Surrey, exhibited a group of Polyanthus plants that had been lifted from the open ground. They were profusely flowered and extremely varied in colour the strain being one of much merit.

About seventy excellent flowers of Gardenia florida intermedia were shown from the Earl of Clarendon's garden, The Grove, Watford, Herts. (gr. Mr. C. Harris). These were arranged with plenty of good foliage in glass vases, three flowers in each, and the perfume from them was naturally very considerable. The flowers had been cut from pot plants two years old and bearing five or six dozen flowers on each plant (Silver Banksian Medal).

Messrs. W. Paul & Son, Waltham Cross Nurseries, Herts, exhibited a few Rose-plants in pots, the varieties being Étoile de France, Perle des Jaunes, and Celia. The first-named variety is a H.P., which has been described in very appreciative terms, but has too much purple tint in the red flowers to please the majority of Rose-growers. Celia is a new H.T. variety, raised by Messrs. W. Paul & Son; it has pink-coloured flowers, and may prove to be a valuable acquisition. Cut flowers were again shown of the very brightly coloured Rose Warrior. This is of glorious colour, and while resembling Papa Gontier is very much richer in colour than that variety. Plants that were forced early are now flowering for the second time.

Awards of Merit.

Anthurium Scherzerianum burfordiense. — This magnificent variety has been raised in Sir Trevor Lawrence's garden at Burford, Dorking (gr., Mr. Bain). The spathes measure 4½ inches broad and are 5½ inches long, and in colour are of richest scarlet.

Auricula "Daffodil."—This is a bright yellow coloured "self" with white "paste," and possesses good form.

Auricula Favourite.—A purple "self" with white "paste," the flowers being of considerable size and good form.

Auricula Standard Bearer.—This alpine Auricula is of purple colour, which becomes rather paler towards the margin of the petals. The flowers have a white centre, and are good in size and form. All of these varieties and others were shown by Mr. Jas. Douglas, Edenside Nurseries, Great Bookham.

Carnation Harlowarden.—A tree variety with large, rich crimson-coloured flowers, good petals, and a moderate degree of perfume. The petals are fringed, the calyx remains good, and the colour is exceptional. Shown by Messrs. T. S. Ware (1902), Ltd., Feltham, and by Mr. A. F. Dutton (Award of Merit).

Corydalis Wilsoni. — This species was introduced from China by Messrs. Jas. Veitch & Sons through Mr. E. H. Wilson. It was described in the *Gardeners' Chronicle*, 1903, ii., p. 123, and an illustration was published in the issue for May 14, 1904, p. 306. The flowers are racemose, of deep yellow colour keeled with green. Shown by Messrs. Jas. Veitch & Sons.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. sec.), W. A. Bilney, R. Brooman-White, De B. Crawshay, N. C. Cookson, J. Douglas, Francis Wellesley, R. G. Thwaites, H. G. Morris, W. H. White, H. T. Pitt, A. A. McBean, G. F. Moore, W. Boxall, W. H. Young, J. W. Potter, W. Cobb, H. Little, H. Ballantine, F. J. Thorne, H. A. Tracy, F. W. Ashton, J. Charlesworth, and H. J. Veitch.

Messrs. Sander & Sons, St. Albans and Bruges, were awarded a Silver Flora Medal for a very showy and interesting group, the principal feature in which consisted in some grand examples of hybrid Odontoglossums raised at Bruges. Specially remarkable were Odontoglossum × Harryano-crispum Jewel, a very beautiful hybrid raised from O. Harryanum (seed-parent) × O. crispum, spotted variety. The reverse cross O. × crispo-Harryanum King Edward, with the spotted O. crispum as seed-parent, was still more remarkable, the large richly-marked flowers inclining in colour to that of O. crispum, even to the toothed edges to the segments, and surpassing most of the blotched O. crispum in colour. Flowers over 5 inches across diagonally, creamy-white, beautifully marked with purple at the back, and heavily marked with rose-purple on the surface. Other fine hybrids were O. × Wilckeanum "Japan" and O. × amœnum Sander's variety. Among showy Cattleyas were good C. Schröderæ, one remarkable form named splendidissima having blush-white flowers, the labellum being white with a glowing mauve-purple blotch with orange disc. Other varieties noted were Eulophia Lubbersiana, with pretty white-and-green leaves and singular flowers; Maxillaria Sanderiana, a fine tuft of the yellow Dendrobium capillipes, good Lycaste Skinneri, hybrid Phaius, &c.

Messrs. Charlesworth & Co., Heaton, Bradford, were awarded a Silver Flora Medal for an important group containing a good selection of Odontoglossum crispum. In the centre of the group was a number of the showy orange-and-crimson-coloured Lælio-Cattleya × Cappei, and at intervals good forms of Cattleya × Empress Frederick, C. × Enid, several Brasso-Cattleyas, including the clear white B.-C. Digbyano-Mossiæ Queen Alexandra. Several forms of Lælio-Cattleya × Mercia, L.-C. × Myra, L.-C. × Wellsiana, Masdevallia Schröderiana, good Odontoglossum × Harryano-crispum, a fine specimen of Coryanthes speciosa with three large buds, the rare clear yellow Odontoglossum Lindeni, two good examples of the fine Brassia brachiata, Dendrobium × Apollo album, and other Dendrobiums and Cypripediums.

H. S. Goodson, Esq., Fairlawn, Putney (gr., Mr. G. E. Day), obtained a Silver Flora Medal for a group, in which good forms of Cattleya Schröderæ C. Trianæ, C. Mendeli, and Odontoglossum crispum were the feature. Grouped with them were two specimens of Cymbidium Lowianum, several good specimens of different varieties of Phaius × Norman, P. Sanderianus, a large and peculiarly-marked light form of Cattleya Warscewiczii; the white C. intermedia nivea, a specimen of the white Chysis bractescens, Cypripedium Argus, C. tonsum, and other Cypripediums; Epidendrum × elegantulum, Oncidium concolor, Dendrobium atro-violaceum, &c.

Messrs. Hugh Low & Co., Enfield, were awarded a Silver Banksian Medal for a group comprising varieties of Cattleya Trianæ and Odontoglossum crispum, one of which was effectively spotted. Also Cattleya Lawrenceana with twelve flowers, C. × Lawre-Mossiæ, Cypripedium × vexillarum, C. × Olivia, C. Lawrenceanum Hyeanum Vanner's variety, Angræcum citratum, Eria obesa with many spikes, Oncidium barbatum, Trichopilia suavis, and Dendrobium Falconeri giganteum.

Sir **TREVOR LAWRENCE**, Bart., Burford (gr., Mr. W. H. White), staged a very interesting group, in the centre of which was a superbly-grown plant of Odontoglossum ramosissimum Burford variety (see Awards). With it were the rare and singular Masdevallia deorsa, with long drooping leaves and pretty yellow-and-purple flower; the elegant little Pleurothallis astrophora, and P. Grobyi; a very rich yellow-and-crimson coloured Lælio-Cattleya × Myra, Tetramicra bicolor, the rich scarlet Epidendrum × O'Brienianum superbum, and E. Schomburgkii; the orange-yellow E. × radico-xanthina, the rose-coloured E. × Ellisianum, E. evectum, E. Linkianum, Miltonia × Bleuana nobilior, and the singular Epicattleya × Gaskello-Parkinsoni.

JEREMIAH COLEMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), showed a group of Epidendrum × Boundii, the plants together bearing over sixty heads of bright-yellow flowers tinted with scarlet. The specimens had been in bloom since October last, and some after cutting the original spikes produced fresh heads of bloom. A very pretty, useful and floriferous hybrid.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Cattleya amethystoglossa Westfield variety, dwarf in habit and bearing good blush-white flowers spotted with purple.

MESSRS. CUTBUSH & SON, Highgate Nurseries, sent Calanthe discolor aurea, a hardy Japanese species with greenish-yellow flowers.

Awards.

FIRST-CLASS CERTIFICATE.

Odontoglossum ramosissimum Burford variety, from Sir **TREVOR LAWRENCE**, Bart.—A very fine form with branched spike bearing about eighty pure white flowers spotted with purple on the inner halves of the segments, which were much broader than in the type, and wavy at the edges.

Odontoglossum × *Wiganianum* (× Wilckeanum × Rolfeæ), from Sir **FREDERICK WIGAN**, Bart. (gr., Mr. W. H. Young).—A very fine hybrid with the large, flat labellum and fine shape which O. Pescatorei imparts to all hybrids in which it is an agent. Sepals and petals bright canary-yellow, the sepals bearing several large dark red-brown blotches, and the petals with many smaller spots on the inner area. Lip broadly ovate oblong, apiculate, white at the base, primrose-yellow in front, and bearing in the middle a few purple spots. It is derived from hybrids on both sides, O. Pescatorei, O. Harryanum, O. crispum, and O. luteo-purpureum entering into its composition, and the result is highly satisfactory.

AWARDS OF MERIT.

Odontoglossum × *amœnum Sander's variety* (Pescatorei × luteo-purpureum sceptrum), from Messrs. **SANDER & SONS**.—A great improvement raised at their Bruges establishment. Flowers of fine substance, creamy-white, prettily marked with dark purple-brown.

Zygopetalum discolor atro-cœruleum, from Messrs. **SANDER & SONS**.—A large-flowered form with creamy-white sepals and petals, the latter being tinged with violet. Lip broad, violet-blue, with a divided white crest at the base.

Odontoglossum crispum Britain's Queen, from H. T. **PITT**, Esq., Stamford Hill (gr., Mr. Thurgood).—A fine flower, with broad, fringed segments heavily tinged with purple at the back. Sepals and petals equally blotched with rose-purple and tinged with lilac.

Epidendrum × *Boundii* (radicans × Burtoni [O'Brienianum × Ibaguense]), from **JEREMIAH COLMAN**, Esq. (gr., Mr. W. P. Bound).—Stems ascending, 2 to 4 feet. Flowers in almost globose terminal heads, bright yellow tinged with scarlet, and varying somewhat in tint with the age of the flowers. A most floriferous, almost perpetual-blooming hybrid.

Dendrobium fimbriatum oculatum Westonbirt variety, from Captain G. L. **HOLFORD**, C.I.E., Westonbirt (gr., Mr. Alexander).—A major form of the fine old species, and fully one-third larger than any previously known. The finely-grown specimen had many drooping racemes of large rich yellow flowers, with dark maroon disc to the fringed labellum.

Narcissus Committee.

Present: Mr. H. B. May (Chairman), and Messrs. A. R. Goodwin, W. F. M. Copeland, J. T. Bennett-Poë, Jas. Walker, W. Poupart, E. A. Bowles, P. R. Barr, W. W. Foster, A. Kingsmill, W. T. Ware, W. A. Milner, R. Sydenham, Miss E. Willmott, Chas. T. Digby, J. D. Pearson, G. H. Engleheart, J. Pope, G. Reuthe, R. Wallace, Chas. H. Curtis.

Messrs. **POPE & SON**, King's Norton, Birmingham, showed some good varieties. Among others were Southern Star, White Queen, Torch (with rich flamed cup), Pope's Surprise (a good yellow), Ajax, Excelsior (yellow self), White Lady, &c. There were also some good seedlings in this display, one named King's Norton having a large trumpet (see Awards) (Silver Banksian Medal).

Messrs. **JAS. VEITCH & SONS**, Ltd., Chelsea, exhibited a small group of choice Narcissus, in addition to several well-known varieties (Silver Banksian Medal).

Mr. G. **REUTHE**, Keston, Kent, contributed such kinds as Victoria, Incomparabilis Beauty, Lucifer. Fairy Queen, and others.

Miss **WILLMOTT**, Warley Place, Great Warley, brought a number of the yellow Hoop-Petticoat kinds, Narcissus Bulbocodium, to show the variation in bulbs collected in various localities.

Mr. **CHAS. DAWSON**, Gulval, Penzance, exhibited a choice assortment of good and novel kinds. The quality of the flowers shown was of the highest standard. We noticed Homespun, Viking, a large, drooping flower resembling N. grandis; Bernardino, colour pale apricot and orange; Peveril and Cavalier, both with richly coloured crowns; Dawn, a flat-crowned flower of the Engleheartii type, with two and sometimes three flowers in a scape (Silver Flora Medal).

Miss F. W. **CURRIE**, Lismore, Ireland, put up a large exhibit, having such good things as Duke of Bedford, Maggie May, King Alfred, White Queen, Flamingo, Goldeye, Lady Margaret Boscawen, &c. (Silver-gilt Flora Medal).

Mrs. **BACKHOUSE**, Sutton Court, Hereford, had, in addition to Lord Kitchener (see Awards), Dewdrop, a most exquisite flower with a biscuit-hued, orange-tipped crown. Also Snowdon, and Zingara, a Leedsii variety with a scarlet-orange cup (Bronze Flora Medal).

The Rev. G. H. **ENGLEHEART**, Dinton, Salisbury, had many choice kinds—Will Scarlet, Electra, an incomparabilis of pale lemon colour; Glitter, an improved Barri conspicua; Hector, a big bicolor; Charlemagne, with spreading, open segments; Chaucer, a fine flower of the Poeticus type, and others (Silver Flora Medal).

Messrs. R. H. **BATH**, Ltd., had a large and good exhibit. Kings Norton was seen in plenty, while Duke of Bedford, White Queen, King Alfred, Lady Margaret Boscawen, Silver Spur, Flambeau, Argent, and others gave ample evidence of the up-to-date character of this fine lot (Silver-gilt Flora Medal).

Messrs. **BARR & SONS**, Covent Garden, contributed a choice collection—Peter Barr, Monarch, Cleopatra, Big Ben (fine yellow), Queen Isobelle, Isolde (a big bicolor), Apricot, Peach, Lucifer, Weardale Perfection, &c. (Silver Flora Medal).

Messrs. **HOGG & ROBERTSON** staged a very fine lot of flowers, in which White Wings, Flambeau, Lady Arnott, Lady Margaret Boscawen, Duke of Bedford, Brigadier, and others were seen to advantage (Silver Flora Medal).

Messrs. **WM. BULL & SONS**, Chelsea, staged an assortment of well-known commercial kinds in bunches.

Awards.

Narcissus King's Norton.—A giant yellow Ajax variety of great proportions. The large spreading crown or trumpet represented, we believe, the largest yet known in these flowers. From Messrs. **POPE & SONS**, King's Norton, Birmingham (First-class Certificate).

Narcissus Lord Kitchener.—This is a fine bicolor of the Sir Watkin type, the prettily-goffered crown being of large size, and varying in colour from lemon to palest sulphur. It is a most beautiful and very distinct sort. From Mrs. **BACKHOUSE**, Sutton Court, Hereford (Award of Merit).

Narcissus Alice Knight.—This is a white Ajax, the much reflexed trumpet passing from sulphur to creamy-buff colour. It is quite intermediate in size, and does not appear to be an improved type or variety. From Messrs. **BARR & SONS**, Covent Garden (Award of Merit).

Fruit and Vegetable Committee.

Present: Joseph Cheal, Esq., in the chair; and Messrs. J. McIndoe, W. Bates, S. Mortimer, A. Dean, W. Pope, W. Parr, Geo. Kelf, H. J. Wright, H. Markham, Jno. Lyne, Geo. Reynolds, F. Q. Lane, Geo. Norman, Owen Thomas, Geo. Wythes, and Rev. W. Wilks.

Messrs. **ROBERT VEITCH & SON**, Royal Nursery, Exeter, exhibited a so-called coreless Apple, but the fruit we cut through had a distinct but small core, although no seeds were present (Vote of Thanks).

Mr. **JOHN GARLAND**, Broadclyst, Exeter, exhibited a seedling Apple.

Some excellent fruits of Royal Sovereign Strawberry were shown by Mr. H. J. **DOVER**, Langley Fruit Gardens, Slough (Cultural Commendation).

Mr. F. **COLLIS**, Bollo Lane, Chiswick, exhibited a bundle of Rhubarb, with a very dark-coloured petiole, named "Collis Ruby." It was recommended that plants be sent to Wisley for trial and comparison with existing varieties.

Awards.

Potato "Syon House Prolific."—This well-known Potato was raised by Mr. Geo. Wythes, gardener to the Duke of **NORTHUMBERLAND**, and received an Award of Merit as far back as September 10, 1895. The tuber is rough-skinned and of oval shape. In consideration of its good qualities the Committee has now awarded the variety a First-class Certificate.

Excellent tubers were shown in twelve baskets by Mr. J. B. **JOEL**, Potter's Bar (Silver Banksian Medal).

Lecture on Retarded Potatos.

The lecture was by Mr. **POWELL**, gardener to Mrs. Noble, Park Place, Henley-on-Thames. It consisted of an explanation of the methods by which a supply of New Potato tubers is obtained from September until February or even March. The procedure, briefly stated, is as follows: The tubers are selected when lifting is done in August or October, according to the season of the variety. These tubers are then stored in a dry place in a temperature of 45°, and when any growths appear they are rubbed off before they have had time seriously to reduce the amount of nutriment and moisture in the old tubers. In the following July early varieties like Windsor Castle, having been hindered from making growth for so long a time, cease the attempt, and in place of this, in August, they produce fresh tubers, apparently as another and final effort made by the tubers to reproduce themselves. Mr. **POWELL** said that it was not necessary to keep the tubers in a lower temperature than 45°, but it was extremely important that the growth they make previous to the following August be removed very early. At Park Place by repeated experiments this method of Potato cultivation has been reduced to a proper system, and by this means, and forcing in spring, new tubers are now obtained in every month of the year. The old tubers are treated in various ways when they are about to produce fresh tubers; some are put out-of-doors, others indoors, and are covered with a little dry earth or leaf-mould. The variety Windsor Castle is the best to begin with.

Mr. **POWELL** showed new tubers on Tuesday from old tubers which are now seventeen months old, but they have been produced some little time and would not "scrape." They had been saved for the purpose of illustrating the lecture. Cooked samples were pronounced to be of excellent flavour. Tubers seventeen months old were also shown, but had now ceased to produce new ones.

Mr. **ARTHUR W. SUTTON** said he had watched the experiments at Park Place for several years. He was sure that the system would become more widely practised, the only hindrance to this being apparently its very simplicity. A member of the audience suggested that the variety "Challenge," owing to its compact habit of growth, &c., would make a very suitable variety for such treatment, and said he had used it in this way.

SCIENTIFIC COMMITTEE.

DO POTATO STOCKS DETERIORATE?

APRIL 11.—Dr. **MASTERS**, F.R.S., in the chair, and a numerous attendance. The following communications, of which time did not permit the consideration at the former meeting, were read on this occasion:—

Mr. **BURBIDGE**.—This is a wide question and has been discussed ever since the late Thos. Andrew Knight, Esq., wrote his *Treatise on the Apple and Pear*, in 1797. It was, I believe, Knight's first book, a small octavo, and is now rather rare. It is a common belief amongst gardeners that varieties do deteriorate or go back in gardens. This I myself do not believe is true if they are well, wisely, and properly cultivated. Deterioration is very often, even if not always, the result of bad culture, senility, or neglect. It is, moreover, due in many cases to growing the same variety too long on the same soil, and to the use of too much manure.

With Potatos this is especially the case; but no Potato as a variety deteriorates on good soils if the seed or sets are changed, or obtained from a different soil and climate every year. The old Ashleaf Kidney Potato is as old as most Potatos, and is still one of the best. The craze for novelty and competition in the trade often lead to good old varieties being superseded by new seedlings or selections, or by old kinds of known excellence being again sent out under new names. Varieties may deteriorate locally, i.e., when badly grown on unsuitable soils or under adverse conditions, but no one can prove that varieties like the Black Hamburgh Grape, Royal George Peach, Moor Park Apricot, Ne Plus Ultra Pea, General Jacqueminot Rose, Old Clove Carnation, ever deteriorate as varieties all over the area of their cultivation. Did anyone ever hear of any variety of Banana, Pine-apple or seedless Grape ever wearing out? Do Osier Willows ever wear out? Varieties may be neglected and weakened by being planted too constantly on the same soil or in unsuitable localities; they may also be renamed or superseded by novel kinds being "boomed" over their heads, so to say; but no variety fairly well grown on fresh and suitable soil ever dies out. No one variety grows or is as productive on all soils alike; but the best varieties are very adaptive, and their produce averages out well on all soils.

Most of the Figs, Mulberries and Grapes grown to-day are practically those known for centuries. Brown Turkey or White Ischia Figs, the Zante Currant Grape, Black Monukka Grape, Bananas, Pine-Apples and other seedless fruits increased vegetatively are as healthy and productive to-day as they have ever been. Of course, the words "a variety" often means that we are dealing with a group of distinct individuals and not with a multitude of individuals precisely alike. Good culture, continual change of soil and rigid selection are all necessary to keep at their best "varieties" so called, and under such conditions I do not admit that the deterioration or wearing out of varieties ever takes place in either gardens or in the fields. In Professor Hugo De Vries work, *Species and Varieties: Their Origin by Mutation*, in which book some aspects of this subject are ably dealt with, it is shown that any crop of either corn or roots, consists of individuals of varying vitality or productiveness. This makes selection possible. There are certain individuals in every crop, as in every flock or herd, that can either utilise more food than others, or that in any case are more productive than are others under the same conditions. The simple art of selection enables the gardener or farmer to improve the best varieties or strains by continual selection. Some individuals in any variety or strain may show a retrograde tendency, and these are eliminated, so as to give added opportunity to the best and most productive individuals, and in this manner the variety is improved and its life ensured. In a word, varieties are constant or ever improving only under the best conditions of cultivation. By the same token they will deteriorate only if neglected and grown under bad conditions. *F. W. Burbidge, Dublin.*

Mr. Clarke: It is a fact that the Potato does deteriorate. It is not wise to grow the same stock for more than two years. We find in this district that the further north we get our seed from the better it is. It is generally considered that the second years' crop gives better results, but at any rate it is not wise to grow the same variety more than two years on one farm. I should not say that after being grown, say, here two years and then moved some miles away, that it would increase in vigour. It might probably grow as well for two seasons and then it would be exhausted. It is a good change from this country on to the black soils, but will not do to come from there to here again, and I think that where the tubers have been grown on black land the better plan is to use the seed for cattle or pigs and get a fresh stock. My experience is that the worn-out stocks take the disease more quickly than others. I am afraid that we shall find that the newer varieties are very tender. I am still a great believer in the spray when properly applied. I think I was one of the first to take it up, and I well remember the opposition encountered. I was in Bedfordshire just putting them in the way how to employ the spray—I think in 1894—when an old gentleman came up to me and said: "Mr. Clarke, I think you are trifling with Providence." That was one instance. Now spraying is general, but it is not half done—hence a good deal of disappointment. *Westmere, Sutton Bridge.*

Mr. Fraser: It has always been reckoned good practice in this district to change "seed" Potatos after a few years, getting seed from a different class of soil if not from another locality. Soil seems to have as much to do with degeneration as climate, or more, and round here we have a great variety of soils—clay that in some seasons is almost unworkable, various gradations and combinations of loam, sand, and gravel, besides black, mouldy soils and peaty soils. We have also within this small county wide differences of climate, including rainfall. Thus, without going far from home, we can have a decided change of locality. It is considered desirable to get seed from a higher district, which means a moister as well as a colder and later climate. Thus, we had British Queen from an up-country farm, say, 600 feet above sea level, planted last season on light gravelly soil on this farm at between 80 and 90 feet. The variety did exceptionally well, but it was from a good farm and was a fine sample to begin with. Potatos from a dry soil are not looked on with favour for "seed," and in the case of such soils it seems to be necessary to change frequently, every two or three years at least, otherwise the leaves grow curly and stunted, and the plant does not properly develop.

Seed from Ross-shire has been found to do well in Morayshire, but so also has seed from Forfarshire. Ross-shire has a considerably moister climate than Morayshire, but not much colder, if at all, at the same elevation. The soil of Ross-shire is, I should think, the richer in general. Forfarshire is agriculturally one of the finest counties in Scotland.

Certain varieties of Potatos seem more liable to degenerate than others. A gardener of some experience tells me that he has grown Snowdrop (or Snowflake perhaps he meant) for ten years, and that he has them still as good as at first.

As a matter of common experience Potatos seem to degenerate by continuous planting in the same class of soil, but there may be contributory causes, such as selecting "seed" from the dressings of the marketed Potatos. I heard just lately of a farmer near here who has stuck to the same stock for I do not know how many years—say fifteen to twenty—with the result that his Potatos are now like "marbles," and this on one of the finest farms in the county.

The Victoria, which became common in this district in the seventies, when the sorts formerly grown suffered badly from disease, was very successful for a number of years, but degenerated in time both as a cropper and in disease-resisting power, and has long been out of cultivation. The Magnum Bonum, which was introduced somewhat later, so far as I remember, kept up better as a cropper, and continued comparatively free from disease, but it was never a favourite on the table at home unless for use in spring, not being "dry" enough. It sold comparatively well, probably on account of its shape and keeping qualities. The Bruce took the place of the Magnum, being somewhat similar in character, but I do not think it was ever so good a cropper, and it has now given place to newer varieties. The Up-to-Date seems to have something of the character of these two last, and does not appear to have degenerated as yet.

As to whether a variety that had lost some of its vigour would regain it by being transferred from the South of England to Scotland, I do not know of the experiment having been tried. I should think there is at least a probability of improvement if soil and locality be properly chosen. The duration of a variety depends largely on its power to resist disease and its place on the market, along with its capabilities as a cropper. For disease-resisting power it has been found necessary from time to time to obtain new varieties, and when new varieties have found favour on the market, they have naturally displaced the old on that account alone. *Alex. Fraser, Locky Hill, Forres.*

Prof. Henslow: Whether Potatos "deteriorate" in value is a question of trade; but that they vary according to the soil and climate of the localities where a particular variety is grown is well established. Prof. Bailey has given a good example in the case of the Newtown Pippin (*The Survival of the Unlike*, p. 99): "It originated upon Long Island, N.Y., and has been widely disseminated by grafting. In Virginia it has varied into a form known as Albemarle Pippin, and a New York Apple exporter tells me that it is a poorer shipper than the northern Newtown, and is not so long-keeping. In the extreme north-western States . . . it is markedly unlike the eastern fruit. . . . In New South Wales it is called the Five-crowned Pippin," &c. Conversely with the Chilian Strawberry: "Within two years this plant, growing in my garden, varied from its wild type so widely as to be indistinguishable from the common garden Strawberry . . . an instructive case of sexless evolution." Professor Bailey then adds: "Any plant which is widely distributed by man by means of cuttings or other vegetative parts may be expected to vary in the same manner."

The above seems to me to answer the question. In many cases by departing from the typical characters the variety might be said to "deteriorate"; but there is also the chance of its acquiring something new, which might balance its value. There does not appear to be any evidence of a variety "dying out" in any other sense. *Geo. Henslow.*

Prof. Scott Elliot: There are two cases in which there is distinct evidence of deterioration in vegetatively reproduced plants. First, the Sugar-cane, which has until the last few years been invariably propagated by non-sexual methods. Its culture dates back to a period so distant that the priests in India had had time to produce an "observed" law—viz, that "if any cultivator saw a cane in flower he would die within the year, his house would be reduced to beggary, and his entire fortune be destroyed." The cultivation has been carried on in very distant parts of the earth, under totally distinct methods, and in widely varying conditions of soil, climate, and exposure. Yet deterioration has been complained of in every part where its cultivation is of importance. And the West Indian Agricultural Conference of 1905 seems to agree that it is to be remedied by using seedling canes.

Another example is the Canadian weed, Elodea canadensis, which escaped from a botanical garden in Germany, and at once spread by vegetative reproduction only all over temperate Europe. For many years it was a curse to all canals, ponds, lakes, &c., and involved very expensive cleaning; but of recent years, though it is by no means extinct, it is certainly not so serious an evil. In small enclosed ponds, after having been a perfect pest for some years, it suddenly begins to dwindle, and may almost totally disappear. A case of this sort came under my own observation in a small pond at the Glasgow Botanical Gardens, where it is now almost extinct, though some five or six years ago it choked the whole of the rest of the vegetation. This case is specially interesting as it is not a cultivated plant, and is one of that hardy band of fresh-water plants which are more widely distributed than any other class of plants known to me.

A very strong argument in favour of deterioration is the general statistical evidence. Out of some 700,000 flowering plants described, there is not one single case known to me of a plant which does not endeavour to reproduce by seed, although arrangements for vegetative reproduction are exceedingly common. Many plants which we do not, as a rule, look upon as vegetative reproducers habitually form underground stolons, rhizomes, &c., and are much more rarely formed from seed.

The answer to the second part of the question is probably a very simple one—Old Age. However much the method of vegetative reproduction varies, the new plant is merely a part of the old one. A Potato grown from a tuber is not a new individual but a part of the original individual. A close examination of bulbs, corms, rhizomes, suckers, stolons, &c., reveals essentially similar methods of branching, which are made different by the different parts in which the food-store is laid up. The differences, such as they are, have been made much more difficult to understand by the misdirected labours of conscientious botanists.

That old age is the primary cause I have personally no doubt at all. We know on good evidence (see Bonnier *Traité du Botanique*) of trees 2,000 years old, not to speak of one kind only, but belonging to several genera. It is not necessary to cite the American Mammoth tree of 3,300 years, or the Canary Island Dragon tree of 10,000 years, and which was probably the original of the Greek myth.

The number of years during which any species can be shown to have been always propagated vegetatively cannot surely attain 2,000 years except possibly the Sugar-cane and the Vine, and in both these cases deterioration has set in. Old age is the reason generally given in both these cases.

Of course, all cultivated plants are grown under quite unnatural conditions. The brilliant sunshine and long, dry season of Chile are quite different from our insular climate. Cultivation under exceptionally favourable conditions must inevitably weaken the constitution of man, beast, or vegetable, unless all our evolutionary theories are hopelessly wrong. Most cultivated plants must suffer from the absence of a struggle for existence and from one-sided selection. It might be possible to delay the deterioration by severe treatment, by change of soil and climate, and other methods. The survivors after such a treatment should be more vigorous than any selected at random for propagation.

A plant has an organised, correlated body, and reacts distinctly to change of climate. This reaction involves a one-sided development. I fail to see how a flowering plant can escape the common enemy—old age. Where are the Potatos of thirty years ago? *G. F. Scott Elliot.*

DETERIORATION OF VARIETIES OF POTATOS.

At the meeting of the Scientific Committee on Tuesday, March 28, I seem to have been understood to have stated that as good yield of Potatos can be obtained without abundance of nitrate nitrogen as with. There can be no doubt that a well-balanced manure, containing abundance of available (nitrate) nitrogen as well as phosphates, potash, &c., is essential for a heavy yield, but I wished to show that disease was frequently more abundant in these forced crops. A slight deficiency of nitrate nitrogen, with an abundance of phosphates, potash and lime, although materially decreasing the yield, conduces to stamina and partial immunity from disease and less deterioration, and tubers grown thus are much more suitable for seed purposes. I can produce considerable evidence to this effect. I shall be glad to know others are honestly trying to verify or disprove this statement. *F. J. Baker.*

THE CORNWALL DAFFODIL AND SPRING FLOWER.

April 4.—This Society opened a most successful show in the Market Hall, Truro, on the above date. Since the Society's inception nine years ago each show has marked an improvement on that preceding it, and in the one now under notice the number of seedling Narcissi not in commerce that were exhibited, many of which were of high order of merit, was remarkable. The arrangements, thanks to the indefatigable zeal of the honorary secretary the Hon. John Boscawen, left no loophole for complaint on the part either of exhibitors or public.

Twenty-two classes were devoted to Narcissus. In twelve no limit was placed on the price of the bulbs, and in these some specially fine flowers were staged. In the unrestricted classes the results were as follows.

In the best collection of not fewer than thirty or more than forty varieties of Daffodils, the 1st prize was awarded to Mr. J. C. Williams, with twenty-eight unnamed seedlings, and Monarch, Incognita, White Queen, Armorel, White Lady, Pilgrim and King Alfred. Many of the seedlings were very fine.

Six varieties Magni-coronati: 1st prize, Mr. P. D. Williams, with a superb stand, containing Maximus, very fine; Diogenes, a beautiful seedling which earned its name from being sheltered by an old tub, excellent in form, with broad, white perianth and pale-sulphur, elegantly-frilled trumpet; King Alfred, grand; Waxwing, a lovely flower, Mme. de Graaff, and Queen of Spain.

Six varieties Medio-coronati: 1st prize, Mr. P. D. Williams, with Homespun (a beautiful clear yellow of perfect form), Ringdove, White Lady, Peregrine, Lucifer (hard to beat), and Miss Mary.

Three varieties Leedsii: 1st prize, Mr P. D. Williams, with Tern, Seagull, and White Queen.

Six varieties Parvi-coronati: 1st prize, Mr. P. D. Williams, with Incognita, Horace, Dawn, Blood Orange, Circlet, and Oriflamme, a very bright stand.

Finest bloom of Magni-coronati in commerce: 1st prize, Rev. A. T. Boscawen, with King Alfred; 2nd prize, Mr. C. Dawson, with Mme. de Graaff; 3rd prize, Mr. P. D. Williams, with N. maximus.

Finest bloom of Medio-coronati in commerce: 1st prize, Mr. P. D. Williams, with Homespun; 2nd prize, Mr. C. Dawson, with the same; 3rd prize, Mr. H. G. Hawker, with Lucifer.

Finest bloom of Parvi-coronati in commerce: 1st prize, Mr. P. D. Williams. All the prizes in this class were won with Horace, the finest of the Poeticus section.

Finest bloom of Magni-coronati not in commerce: 1st prize, Mr. P. D. Williams, with Averil, a seedling from Victoria, a well-shaped flower with white perianth and pale-yellow trumpet. Mr. P. D. Williams also showed Spoonbill, a very large flower with white perianth and spreading trumpet 2½ inches across.

Finest bloom of Medio-coronati not in commerce: 1st prize, Mr. P. D. Williams, with Peregrine, a flower of perfect form with white perianth and sulphur cup; 2nd prize, Mr. J. C. Williams, with a rich yellow self. 3rd prize, Mr. P. D. Williams, with a pretty flower having a white perianth and fawn-coloured cup.

Finest bloom of Parvi-coronati not in commerce: 1st prize, Mr. J. Williams, with a fine Poeticus with circular perianth and scarlet crown. 2nd prize, Mr. J. C. Williams, with another Poeticus, having a spreading yellow crown margined with scarlet. 3rd prize, Mr. J. C. Williams, with White Star, a most beautiful flower, by some thought the gem of the show, with a shapely white perianth over 4 inches across, and a flat yellow crown 1¼ inch in diameter.

In eight classes, which were filled, the price of the bulbs was limited to 10s., and in one for children to 1s.

Lady Margaret Boscawen's 1st prize stand of Poppy Anemones was particularly fine. Anemone fulgens, Polyanthus and Primroses were largely shown.

Mr. P. D. Williams was awarded the 1st prize for a collection of hardy herbaceous flowers; and the Rev. A. T. Boscawen the 1st prize for a collection of hardy bulbous flowers, his stand containing Watsonia coccinea, brilliant in colour, and three good Fritillarias.

Violets were splendidly shown, Mrs. J. C. Williams receiving a Cultural Commendation for enormous La France, which took the 1st prize in the class for one variety of singles.

Rhododendrons, as usual at Truro, contributed much to the brightness of the show. In the class for the best group of blooms, Mr. D. H. Shilson easily took 1st prize with an excellent collection, including R. Griffithianum (very early), Duke of Cornwall, eximium, Thomsoni, barbatum, Shilsoni, grande, and many arboreum varieties.

Mr. Shilson also won the 1st prize in the classes for six trusses of outdoor Rhododendrons, and for six trusses of greenhouse Rhododendrons.

For the finest truss of outdoor Rhododendron Mr. R. Fox won the 1st prize with Glory of Penjerrick; Mr. Jonathan Rashleigh taking 2nd prize with R. barbatum.

Mr. J. C. Daubuz took 1st prize for the best truss of greenhouse Rhododendron.

For six varieties of Camellias, Mrs. John Williams won the 1st prize.

Four entries were staged for the finest cut bloom of Camellia, all the exhibitors showing C. reticulata. The 1st prize was won by Rev. A. T. Boscawen with a splendid flower over 7 inches across.

The two classes for outdoor, hard-wood flowering shrubs produced a wonderful display that few not acquainted with the possibilities of Cornwall would have deemed possible in the first week of April. Among the specimens shown were Embothrium coccineum, Boronia megastigma, Acacia longifolia, A. floribunda, A. cordifolia, Eriostemon neriifolium, Polygala myrtifolia, Cestrum elegans, C. fasciculatum, Viburnum rugosum, Grevillea sulphurea, G. rosmarinifolia, Clianthus puniceus, Cytisus racemosus, Clematis indivisa lobata, Melianthus major, Xanthoceras sorbifolia, and several Magnolias.

In the class for twenty varieties of these the 1st prize was awarded to Sir A. Pendarves Vivian.

An Award of Merit was given to the Hon. John Boscawen for Primrose Evelyn Arkwright; and a Cultural Commendation to Mr. A. Blenkinsop for three remarkably fine flowers of Narcissus Homer.

Col. Tremayne, Carclew, contributed (not for competition) a fine group of flowering shrubs, and two plants of the beautiful Rhododendron Nuttalli in full bloom. Mr. P. J. Kendall showed six vases of King Alfred Narcissus; and Mr. C. Dawson, Rosemorran, Gulval, a number of splendid examples of the fine poeticus Horace.

Nurserymen.

Messrs. Robert Veitch & Son, Exeter; the Devon Rosery, Torquay; Messrs. Wallace & Co., Colchester; Messrs. Barr & Sons, and Mr. G. Reuthé, Keston, contributed attractive stands, and all were awarded the Society's Certificate of Merit.

Messrs. R. Veitch & Son showed Rehmannia angulata, said to be hardy in the south-west; Kalanchoe flammea, K. kewensis, Gnidia carinata, Jasminum primulinum, Calceolaria Burbidgei, Primula floribunda, P. Isabellina, P. kewensis ×, P. verticillata, a fine collection of Magnolia species and varieties, of which M. Kobus, a native of Japan, where it grows to a height of 60 or 70 feet, was given an Award of Merit. The flowers of this plant are pure white, about 4 inches across, and sweetly scented.

The Devon Rosery staged a fine collection of pot Roses in bloom, some hundreds of cut Roses, Carnations, Azaleas, and other plants.

Messrs. Wallace & Co. exhibited Gerbera Jamesoni, the perpetual-flowering Viola calcarata Papilio, Fritillaria aurea, Tulipa Kaufmanniana, T. Kolpakowskiana, Sisyrinchium grandiflorum, Shortia galacifolia, Iris sindjarensis, I. sindpers, and divers alpines.

Messrs. Barr & Sons set up a representative collection of Narcissi, among which were many not generally known, such as Henry de Vilmorin, Agnes Harvey, Mountain Maid, Amazon, Lady Godiva, Peter Barr, Admiral Makaroff, Lord Roberts, Loveliness, Cleopatra, Constellation, Vivid, Janet, Image, Lady James Jodrell, Lucifer, Salmonetta and others.

Mr. G. Reuthe showed Iris Mariæ, I. Eggeri, I. stylosa, Daphne Blagayana, Cypripedium spectabile, C. fasciculatum, Dendromecon rigidum, Epigæa repens, Polemonium confertum, a very fine pan of Tecophilea cyanocrocus, Artemisia frigida, Erythronium Hendersoni, and many Saxifragas, Androsaces, Primulas and other rock plants.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

This Society having removed from the Caledonian Hotel, held its monthly Committee meeting on Monday evening last at its new quarters, viz., the Royal Horticultural Hall, Vincent Square, Westminster, S.W. Mr. C. H. Curtis presided. Eleven new members were elected, making an addition of seventy-four since January last. Sixteen members were reported on the sick list at the present time. The amount of sick pay for the month was £46 7s. Two members were allowed to transfer from the lower to the higher scale. The quinquennial valuation of the Society will be placed in the hands of Mr. Thos. G. Ackland. The usual quarterly grants from the Benevolent Fund were passed. The Committee hope that the removal of its headquarters to the Royal Horticultural Hall will be an incentive for many young gardeners to join the Society.

GARDENERS' DEBATING SOCIETIES.

BECKENHAM HORTICULTURAL.—At the last meeting of the above Society for the session 1904—1905, Mr. W. A. Cook read a paper on "Forced Vegetables," which contained much useful information. A number of questions were put to the lecturer, evoking a good discussion. Mr. M. Webster exhibited a fine lot of Rhubarb, "The Sutton."

LIVERPOOL HORTICULTURAL ASSOCIATION.—The nineteenth spring show of the above Association was held in St. George's Hall, Liverpool, on March 29 and 30. The quality of the exhibits has never been surpassed in previous years. The 1st prize for a group of miscellaneous foliage and flowering plants fell to Alderman W. H. Watts (gr., J. Bracegirdle); the 2nd prize being awarded to Dr. J. A. Cooke (gr., G. Osborne). For ten pots of hardy herbaceous or bulbous plants, W. Todd, Esq. (gr., G. Heaton), was 1st. The most tastefully-arranged dinner-table was set up by Mr. J. Stone, gr. to F. H. Gossage, Esq. Good exhibits were staged by the following nurserymen:—Messrs. R. P. Kerr & Sons, Mr. H. Middlehurst, Messrs. Cowan & Co., Gateacre; Mr. T. Davis, Mr. C. Young, Messrs. Hogg & Robertson, and Messrs. Charlesworth & Rowlands. *J. P.*

ISLE OF WIGHT HORTICULTURAL.—A meeting of the above Association was held at Warburton's Hotel, Newport, on Saturday, April 8; Dr. Groves, J.P., presided. Mr. G. Grey, gardener to Mrs. Morgan, Woolmerton Manor, St. Lawrence, gave a paper on "Hardy Bulbous Plants." The essayist, in the course of his paper, made a great point of "naturalisation," The Crocus readily lends itself to this treatment. Anemones represent a wide range of colour, and their flowering season extends over several weeks. Irises were dealt with at considerable length; also Narcissi, which are probably more effective in the wild garden than any other bulbous plants. Bulbs planted in the grass should be allowed to retain their foliage until it shows signs of "ripening," this being most essential. A good discussion followed.

CROYDON AND DISTRICT HORTICULTURAL.—The subject for Tuesday, April 4, was "Hardy Herbaceous Plants," by Mr. E. H. Jenkins, Queen's Road Nursery, Hampton Hill, who is known to be an expert in this branch of horticulture. The Hellebores, Phloxes, Michaelmas Daisies, Pyrethrums, Delphiniums, and Lathyrus were, amongst others, amply described. In each variety he advised the most suitable situation for their reception, and mentioned the time of year and the method of propagation.

SCHEDULES RECEIVED.

Addlestone, Chertsey, and Ottershaw Gardeners' Association Autumn Show, to be held at the Village Hall, Addlestone, on Thursday, November 9, 1905.

Croydon Horticultural Society's thirty-eighth Annual Summer Show, to be held on Wednesday, July 5, 1905.

Sutton and District Rose Society's Exhibition, to be held in the Public Hall, Sutton, on Tuesday, July 4, 1905.

Croydon Chrysanthemum Society's Autumn Show to be held on Tuesday and Wednesday, November 7 and 8, 1905, in the Public Halls, George Street, Croydon.

Hanley Horticultural Fete, to be held in the Hanley Park on Wednesday and Thursday, July 5 and 6, 1905.

Paisley Horticultural Society's Grand Autumn Exhibition, to be held in the George A. Clark Hall, Paisley, on Thursday and Friday, September 7, 8, 1905.

Windsor, Eton, and District Rose and Horticultural Society's Annual Exhibition in The Slopes, Windsor Castle, on Saturday, July 1, 1905.

London Dahlia Union's Exhibition in the Prince's Hall, Earl's Court Exhibition on Tuesday and Wednesday, September 19 and 20, 1905.

Lee, Blackheath, Lewisham and West Kent Horticultural Society's Summer Exhibition in the grounds of The Cedars, Belmont Hill, Lee, on Wednesday and Thursday, July 12 and 13, 1905.

Darlington Horticultural Society's Spring Flower Show, to be held in the Drill Hall, Darlington, on Wednesday, April 19, 1905.

Croydon and District Horticultural Society's fifth Annual Spring Flower Show, to be held in the Art Galleries, Park Lane, Croydon, on Wednesday, April 19, 1905.

Hawick Horticultural Society's Flower Show, to be held in the Exchange Hall, Hawick, on Saturday, August 26, 1905.

Obituary.

JAMES WILSON, ST. ANDREWS.—The ancient city on the east coast of Scotland has earned fame as the seat of the oldest of the Scottish universities and as the Mecca of golf. It is not altogether unknown, however, as a centre of horticultural enterprise. Most visitors to the city are familiar with the compact and attractive florist's establishment which has been conducted there for forty years by the late Mr. James Wilson.

Mr. Wilson served an apprenticeship to gardening in St. Andrews, and he was a fine example of the old school of gardeners. When an apprentice he made a herbarium of the plants of the district, and thus laid the foundation of an extensive and exact knowledge of plants both wild and cultivated. He was familiar with every branch of gardening and a keen student of horticultural literature. No branch of his profession, however, appealed to him more than that of landscape gardening. To skill in plan-drawing he added ingenuity in carrying out the work and a thorough knowledge of the plants required for effect. He was instrumental in adding to the charms of St. Andrews. Such works of his as the planting of the fine trees in the main thoroughfare, the laying-out of the new cemetery, and the remodelling of the extensive grounds of the St. Leonards school for girls, may be mentioned.

Mr. Wilson took an enthusiastic interest in the experiments in hybridisation carried out by his second son, Dr. John H. Wilson, Lecturer in Agriculture in St. Andrews University. As a result the visitor to Greenside Nursery finds many interesting novelties, which before long may prove to be of value to both gardeners and farmers. It is satisfactory to learn that the business falls into the hands of the eldest son, Mr. James Wilson, who for many years has ably assisted his father. Mr. Wilson died suddenly on the 7th inst. He was 70 years of age.

J. BURRELL.—We greatly regret to hear of the death of this gentleman, on the 31st ult., at Cambridge. Mr. Burrell, of Howe House Nurseries, was not only admired for his horticultural achievements, but was held in the highest respect for his sterling qualities as a man. His collections of Cactus Dahlias, Roses and Gladioli shown at the meetings of the Royal Horticultural Society, the National Chrysanthemum Society and other shows, were always remarkable for their good cultivation and choice varieties.

MR. REW.—There has just passed away in the person of Mr. Rew, at Caledon, Co. Tyrone, an old Syon [House] man. He was an apprentice there in 1827, and afterwards went to Tor Abbey, thence to Tredegar Park, and finally to Caledon Castle, Co. Tyrone, where for fifty years he was Head Gardener to two Earls of Caledon, retiring on a well-earned pension in 1893. Mr. Rew was born in 1813, and was therefore in his 93rd year. All who had the good fortune to know Mr. Rew will regret his death. He was a kindly, courteous man, whose ripe experience was at the disposal of all. I, who succeeded him at Caledon, owe him a deep debt of gratitude for his sound advice and kind counsel. *W. B. Jeffreys.*

ANSWERS TO CORRESPONDENTS.

⁂ **Editor and Publisher.**—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the Publisher; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the Editor. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Anemone: *A.* The Anemone is affected with Æcidium punctatum. The Crocus leaves appear to have started rapidly into growth, and then suffered a check.

Begonias Winter Cheer, Mrs. Heal, Ensign, &c: *W. C. L.* These plants may be afforded water about once a week or less frequently at the present time, and there are probably some growths appearing in the axils of the leaves which may be employed as cuttings for propagating purposes. The culture in February and March and even now should be such as will induce the plants to swell and mature the tubers. In June the plants should be cut down to within 2 inches of the base, and no potting need be done until then. We refer you to a note which appeared in these pages March 7, 1903, p. 146.

Books: *J. I.* The edition you mention has little if any value.

Catalogues of London Horticultural Society: *N. O. B., New York.* Your letter has been forwarded to the Secretary of the Royal Horticultural Society.

Chrysanthemums: *W. H. C.* We see no disease in your plants, and should expect that they will, if properly treated, start well into growth later on.

Chrysanthemum-leaves: *Puzzled.* The leaves are injured by the punctures of aphides. Isolate the other variety, and fumigate the infected plants with an insecticide.

Employment as Seedsman's Clerk: *M. E. L.* In such circumstances as yours we cannot pretend to offer advice.

Gloxinias: *J. S.* Found dead. You should know better than we do what is the reason. Perhaps over-watering. We find no fungus or insect.

Mushroom-spawn: *R. S.* All sorts of things come up occasionally even when the best Mushroom spawn has been employed. The fungus in this case is that known as Xylaria vaporaria, figured in *Gardeners' Chronicle,* April 16, 1904.

Names of Plants: *D. M. L.* 1, Mimulus (Diplacus) glutinosus; 2, send when in flower.—*Y. D.* Cornus mas.—*H. M.* Ceanothus rigidus.—*H. S.* Spiræa Thunbergii; Daphne Mezereum.—*E. A. H.*—Ipomœa hederacea.—*Sir A. B. H.* Euphorbia aleppica.—*T. H. S.* The yellow-and-brown flower with branched spike is Odontoglossum gloriosum; the creamy-white with a few spots, a natural hybrid of it and O. crispum, a form of O. × Andersonianum sometimes called O. baphicanthum.—*A. J. R.* Please inform us of the habit of the plant of which you send flowers. Send rough sketch if possible. Thanks for contribution to Gardeners' Orphan Fund.—*F. L.* 1, Chlorophytum elatum variegatum; 2, Dactylis glomerata elegantissima; 3, Curculigo recurvata; 4, Ceratonia siliqua, Carob-tree (Locust-tree of Scripture); 5, Davallia hirta cristata; 6, Begonia ascotiensis.—*R. S. P.* Dolichos sinensis, widely grown and known at the Cape as Kaffir Bean.—*A. S.* Tricopilia fragrans.—*J. O.* 1, Andromeda calyculata; 2, Skimmia japonica; 3, Muscari neglectum majus.—*R. C. Canon L.* Muscari moschatum; the bulb apparently got in with others by accident.—*F. Mc.D.* 1, Chlorophytum elatum; 2, Cornus mas.—*F. J. P.* Rubus spectabilis—the Salmon-berry.—*J. R.* 1, Mesembryanthemum spectabile; 2, Spiræa Thunbergii; 3, Berberis dulcis; 4, B. Wallichiana.—*W. J.* 1, Athyrium filix-fœmina; 2, Onychium lucidum; 3, Anemia Phyllitidis; 4, Panicum plicatum; 5, Nephrodium molle; 6, Aspidium (Polystichum) angulare; 7, Adiantum Pacoti; 8, Blechnum orientale; 9, Chlorophytum elatum variegatum; 10, Lonicera brachypoda variegata; 11, Pteris hastata macrophylla. You send double the number of specimens you should do, and moreover they are miserable scraps, badly labelled. You should have more consideration for us, as our time is valuable and the interests of our subscribers paramount.

Ostrowskia magnifica: *G. A. M.* This handsome plant is quite hardy, and will flourish in any good and well-drained garden soil, but it prefers a rich sandy loam, and one that is deep enough to allow its long roots to strike downwards in the soil. The seedlings do not bloom until about their third or fourth season. This probably accounts for the fact of your plants not having flowered up to the present time.

Peach: *G. G.* The leaves have suffered a check from some cause or other. The fungus will be reported on in another issue.

Peach Flowers Dropping: *C. R.* The tree probably suffered too severe a check when you root-pruned it last autumn. If this is the case the tree can only develop a small crop of fruit this year, and is endeavouring to attain this by shedding most of its blossoms. Another season should see the tree benefiting from the new soil, &c., given when the root-pruning was performed. Numerous letters on the dropping of Peach-buds have appeared in our columns quite recently.

Peach-shoots Diseased: *J. E.* The black patches are the result of a fungus, a species of Botrytis. The disease most frequently appears on imperfectly ripened shoots, or on those that have received a chill. All diseased shoots should be cut off and burned, otherwise the disease will spread. After pruning spray the trees with a rose-red solution of permanganate of potash.

Peach-training: *G. H.* In well-appointed gardens it is considered the correct practice to train the young shoots beneath the wires, and not to leave them growing untrained until the trees are fastened again the next season. When the Peaches are ripening all the shoots should be fastened down to the trellis, in order to allow sunlight and air the better to reach the fruits.

Pelargoniums and Black Varnish: *J. S.* The effect would be much the same whether caused by the black varnish or tar. It is best to employ as much ventilation as practicable after using either in plant-houses, until the varnish or tar has become dry.

Phaseolus caracalla: *Correspondent.* This species is from India, and requires stove treatment. Let the growth have plenty of light, and when the plant has made a considerable quantity of roots it will be likely to flower.

Sale of Box Plants: *Box.* We are not dealers, and therefore are unable to answer your question. An advertisement would probably elicit the information you require.

Shamrock: *H. T.* It is entirely a matter of opinion. What you send is Trifolium minus. The subject was treated exhaustively by Mr. Worthington-Smith in our issue for April 7, 1900, p. 222.

Stone Pine: *G. M. R.* The seeds may be liberated by knocking the cones with a hammer or mallet, or by placing them in water hot enough to soften the turpentine which keeps the scales together; then take out the seeds by means of a knife. The scales will also come asunder if the cones are placed in a warm oven. It is not really necessary to break the hard outer shells of the seeds previous to sowing, but if you do break them be very careful not to injure the embryo plant. Germination will be facilitated if they are soaked in water. The present is a suitable time for sowing the seed either in pans or shallow boxes, which should be placed near to the glass in a warm frame. No special soil is necessary so long as it is sweet, and ample drainage is provided. When the seedlings attain to a height of about 2 inches they should be transferred to small pots and returned to the frame, watered carefully overhead, and shaded during the hottest part of the day. It will be advisable to keep them in a cold frame for about two years, because they are rather delicate during the early stages of growth.

Vine Leaves: *J. C.* Powdery mildew is present on the leaves received. Spray at intervals of six days with a solution of 1 oz. of sulphide of potassium dissolved in 3 gallons of water. This method is more effectual and much safer than treating the leaves with flowers-of-sulphur.

Communications Received.—S. Palmer.—W. B. B. We appreciate your comments very highly.—G. R. S.—National Dahlia Society—T. M.—James Veitch & Sons—F. J. B.—National Horticultural Society of France—John Booth, Berlin—A. Chatenay, Paris—W. M.—A. D.—W. H.—J. M.—F. B. S.—J. B. L.—F. Q. Lane—J. C. T.—R. W. R.—R. T. & S.—Perplexed—J. B.—E. M.—J. O'B.—Secretary, Sweet Pea Society—Heather Bell—F. M.—W. S.—Trelessick—W. H. B.—C. E. D.—E. E.—L. L., Grantham—A. H. B.—F. E. S.—J. F. H.—R. T. & Sons—A. D.—F. J.—H. W. W.—Chloris—J. C., Bagshot.

(*For Markets and Weather, see p.* xiv.)

THE
Gardeners' Chronicle

No. 956.—*SATURDAY, April* 22, 1905.

CONTENTS.

Alpine plants 245
Aphis, the Giant Willow 243
Apiary, the 251
Armstrong College, Newcastle-upon-Tyne 248
Arnott, Mr. S., presentation to 249
Auriculas, new green-edged show 250
Bay-trees... 251
Board of Agriculture, the 248
Books, notices of—
  Cultivation and Preparation of Para Rubber 249
  Pictorial Practical Tree and Shrub Culture 249
  Publications received 249
Ceropegia Woodi, the fruit of... 244
Crowea angustifolia ... 242
Cucumber "spot" disease 251
Cymbidium Schröderi 241
Elder, the 248
Flower bed, a novel ... 253
German South-West Africa 248
Grafting, novel ... 250
Grafting and its effects 249
Grouse disease... ... 249
Kew notes 250
Laurelia aromatica ... 252
Magnolias 250
Nepenthes, the pitchers of 241
Nursery notes 253
Obituary—
  Rashleigh, Jonathan 248
Orchid notes and gleanings 245
Potatos 252
Seed-sowing 252
Societies—
  Devon Daffodil and Spring Flower Show... 254
  Midland Auricula ... 254
  Midland Daffodil ... 255
  Royal 256
  Royal Horticultural (Scientific Committee) 254
Timber crops, French 252
Trees, timber value of exotic 246
Violets, the culture of 244
Watering of plants in pots 244
Week's work, the—
  Flower garden, the 247
  Fruits under glass... 246
  Hardy fruit garden 247
  Kitchen garden, the 247
  Orchid houses, the 246
  Plants under glass... 247

ILLUSTRATIONS.

Alpine-house at West Down Gardens, near Haslemere 245
Aphis, the Giant Willow 243
Apple tree with branches intergrafted 250
Crowea angustifolia 242
Flower-bed, a novel 253
Seed-pod, a curious 241
View of a portion of Messrs. Sander's nursery at Bruges 251
Views in German South-west Africa (Supplementary Illustration)

THE PITCHERS OF NEPENTHES.

At the meeting of the Linnean Society on April 6, Mr. W. B. Hemsley, F.R.S., the Keeper of the Herbarium of the Royal Gardens, Kew, exhibited a series of lantern-slides prepared by Mr. Farmar illustrative of the structure of the pitcher in various species of Nepenthes. Mention was also made of a new species, N. Macfarlanei. The following notes include an abstract of Mr. Hemsley's remarks, for which we are indebted to the author:—

Among the many works of the veteran Sir Joseph Hooker there is perhaps none that is more attractive to a large number of readers than his Address on Carnivorous Plants to the Department of Botany and Zoology of the British Association at Belfast in 1874. I refer to this essay because Darwin designates Hooker as the discoverer of the carnivorous nature of the pitchers of Nepenthes, and because Hooker's nomenclature of the different parts has been generally adopted by subsequent English writers.

There are glands of various kinds on nearly all parts of Nepenthes plants—on the stem, on the leaves, on the tendrils, on all parts of the pitchers, on the pedicels, and on the flowers. There may be few or none or many on a given organ; they may be conspicuous or inconspicuous, and of very diverse structure or shape; but they may all be referred to two classes, according as their function is "attractive" or "digestive."

Attractive glands of all kinds exude a sweet juice, and may be called honey-glands. They are generally distributed over the plant, excepting on the inside of the pitchers, and serve to attract insects and other creatures towards the pitchers and to their own destruction. Digestive glands occur only on the inside of the pitchers. In an early stage, while the lid of the pitcher is still closed over the mouth, the digestive glands secrete a fluid and discharge it copiously into the cavity of the pitcher, sometimes half filling it. At first the fluid is of a pleasant taste, but later it changes in character and is able to dissolve organic substances and render them available as food for the plant. It has been compared to the gastric juice, as it exercises practically the same function. Honey-glands and digestive glands are alike in structure, and very similar to simple animal glands.

The pitcher (ascidium) consists of the tubular or inflated body, with or without two longitudinal wings (alæ) in front, a longitudinal rib (costa) at the back, terminating in a spur (calcar) near the hinge of the lid; the collar or rim (peristomium) and the lid (operculum), which is sometimes smaller than the mouth (os) of the pitcher.

All the parts of the pitcher present great variety, and specific distinctions are drawn more often from the pitchers than from either the leaves or the flowers. In adult plants the pitchers usually have an attractive, a conductive, and a secretive surface. The attractive surface is the underside of the lid and the collar, which usually abound in honey-glands. Below the collar is a zone of variable breadth, of very smooth surface, affording no foothold to insects and usually opaque and glaucous. This is the conductive surface. The rest of the surface of the pitcher is more or less thickly beset with glands, forming the digestive and detentive surface. The relative size of the areas of the conductive and glandular zones differs very much, and sometimes the whole surface is glandular.

Professor Macfarlane, formerly of Edinburgh and now in Philadelphia, who has long made a special study of the Nepenthaceæ and Sarraceniaceæ, and who has published several important papers on the subject in the *Annals of Botany*, when at Kew last year called my attention to a specimen of a curious new species of Nepenthes which he came upon when he was on the very point of leaving. It consists of one small pitcher and three or four small leaves, and comes from Gunong Bubo in the Malay Peninsula, from an altitude of about 5,000 feet. I agreed to examine and describe it, and drawings had been made for Hooker's *Icones Plantarum*, and I proposed naming it N. MACFARLANEI.

Having reached this stage, I showed what I had to Dr. Prain, the Superintendent of the Calcutta Botanic Garden. He at once very generously offered to have the whole of the Calcutta Nepenthes sent to Kew to aid me in my studies. Fortunately the collection arrived a week ago, and it contains upwards of a dozen specimens of this remarkable new species from the same locality, so that I am now in a position to give you an almost complete description of it. A further consignment received this week included female flowers, which were previously unknown to me. However, there is nothing remarkable in the flowers of either sex.

This new species differs from all previously described species, except N. Lowii, in having numerous, rather stiff bristles interspersed with the large honey-glands on the under surface of the lid. In all other respects it is very different from N. Lowii. It is of climbing habit, the stems attaining as much as 15 feet in length. Like most if not all other species of Nepenthes, it bears two kinds of pitcher, independently of the rudimentary ones of young seedlings, both of which I will briefly describe. The lower ones are much the smaller, being only about a third the size of the largest, the dimensions of which I will give you presently. The honey-glands are very prominent, oval or circular in outline, surrounded by a raised rim, and from one-fiftieth to one-twelfth of an inch in diameter. The function of the bristles on the underside of the lid is not obvious, but it would appear to be preventive, so far as flying insects and the honey-glands are concerned. On the other hand, ants might creep in amongst them and obtain the honey. The lids of the pitchers of some species of Sarracenia are furnished with similar though weaker hairs.

The wings of the pitcher are slightly developed and not fringed, and the collar is very simple and narrow. The whole of the interior surface, except a very narrow belt close under the collar, is thickly studded with digestive glands, which become gradually smaller from the base of the pitcher upwards, and vary in number from about 2,000 to 5,000 in a square inch. The digestive glands are many-celled, ovoid or spherical in shape, and, in consequence of the unequal growth of the tissue in which they are embedded, they are more or less over-arched, the opening of the arch looking downwards. The surface is hard and polished, quite smooth to the finger moving in a downward direction, but rough to the finger from the sharp edges of the arches moving in an upward direction.

Coming to the larger pitchers, I have one which measures 12 inches from the base to the apex of the erect lid. It is borne on a tendril 18 inches long, and the sessile blade of the leaf is several inches long, making a total length of 37 inches. Pressed flat, the body of the pitcher is nearly 4 inches in its greatest diameter. The collar is half an inch wide, and the finely pectinate inner border has solitary, immersed honey-glands between the teeth. The lid is 2 inches across, and the longest bristles are half an inch. The interior is very different from that of the smaller pitcher, as it has a broad, glaucous conductive zone.

The pitchers of *N. Lowii* are larger, thicker and stronger, and remarkably constricted in the middle. The bristles on the lid are larger and stiffer and more of the nature of prickles, whilst the honey-glands are perithecioid, in other words immersed in and covered by the surrounding tissue, with the exception of a very small pore, through which the honey is exuded. The glands are relatively very large, sometimes as much as $\frac{1}{15}$ inch in diameter, and there is a large lumen or empty space between the top of the gland and the excretory pore.

The collar of the pitcher is the simplest in the genus, having no embellishments beyond a ring of prominent honey-glands. These honey-glands are immersed and protected by a very hard, shining, overhanging tissue with a pore-like opening, looking downwards. In time the glands decay and disappear, leaving the hard empty sockets, which accounts for the glands having been overlooked by some writers, and the sockets described as perforated tubercles. The under or outer surface of the collar is thickly beset with small honey-glands. Inside, the pitcher is wholly covered with digestive glands. Those near the top are small and over-arched, but the size increases downwards, and in the lower half the glands are about half a line ($\frac{1}{24}$ inch) in diameter and pentagonal to heptagonal in shape, with a raised, hard rim all round, giving the surface the appearance of being irregularly tesselated. The dried specimen shows this very distinctly.

In striking contrast to N. Lowii the huge pitcher of *N. Rajah* is most elaborately ornamented. It has broad, fringed wings, and the broad, plaited, slippery collar has a strong, comb-like, incurved inner margin. The mouth of the pitcher is very oblique, and the collar is split and elongated at the point where the lid is attached, and the teeth of the opposite margins overlap each other and are continued up to the hinge of lid. Between the teeth of the comb-like margin are solitary pores, visible to the naked eye, which are the openings of excretory ducts leading to the deeply-seated honey-glands. The enormous lid is covered with honey-glands, which are quite different from those of N. Macfarlanei, being perithecioid and similar to those of N. Lowii. The honey-glands of the lid of the cultivated specimen of N. Rajah have much larger pores than those of the big wild one. Inside, the pitcher is covered with glands, of which there are about 4,000 to the square inch, and as the pitchers sometimes have a capacity of two quarts it may be imagined how enormous the total number of glands must be. This species has the largest pitcher of any of the genus. The wild one exhibited has a leaf-blade 20 inches by 7 inches; a tendril 20 inches long, peltately attached 2 inches within the margin of the blade; a pitcher 12 inches by 7 inches, with a lid 10 inches by 8 inches. This gives from the base of the leaf to the top of the upraised lid a total length of 5 feet 2 inches. In addition to beetles, ants, and other insects, some of these big, strong pitchers catch other creatures. A drowned rat has been found in a pitcher of a plant of N. Rajah growing wild.

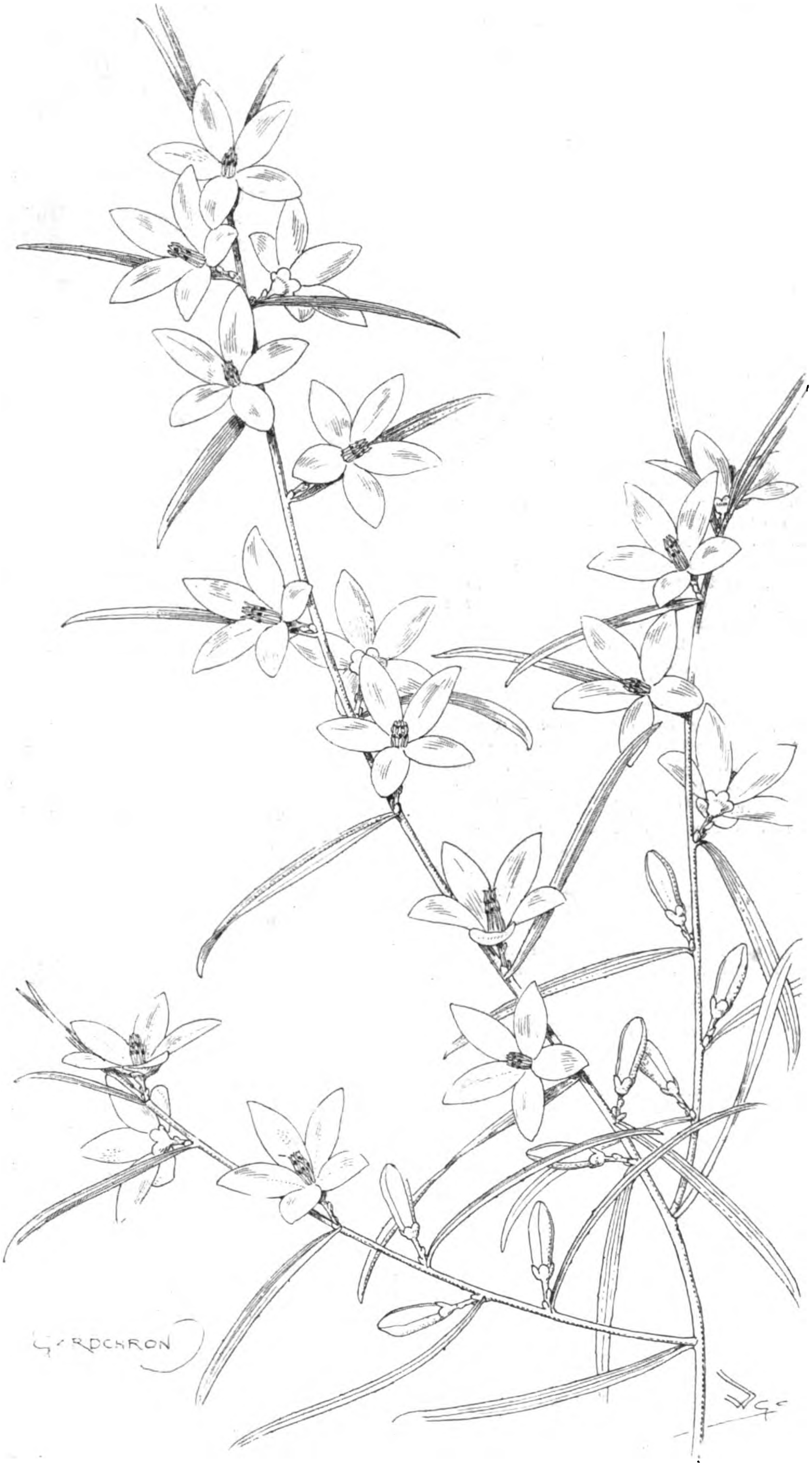


FIG. 101.—CROWEA ANGUSTIFOLIA, A HARD-WOODED GREENHOUSE PLANT: COLOUR OF FLOWERS REDDISH-PINK.

N. Edwardsiana has a pitcher of a totally different type. Compared with that of N. Rajah it is narrow, but a specimen nearly 2 feet long is on record. It is wingless, but the collar is very elaborate, being furnished with thin, broad, transverse rings at right angles to its circumference. The conductive surface occupies nearly three-quarters of the inside of the pitcher; the glandular part has a very glittering surface, and the glands are very small.

The pitcher of *N. echinostoma*, as its name denotes, has a spiny mouth, the collar being furnished with about four series of flattened spines projecting inwards and downwards into the cavity of the pitcher. Each spine has an apical pore, which is the mouth of an excretory duct leading to a deeply-seated cylindrical honey-gland. In all the other species I have examined the glands are between the teeth. The conductive zone of the pitcher extends about a third of the way down, and the rest of the surface is densely covered with peptic or digestive glands, which are completely overarched or at the bottom of inverted pockets, and hidden from view. In the upper part there are about 15,000 to the square inch, and they are almost as small and as thickly set down to the very bottom of the pitcher.

I may mention that this and other computations have been checked by one or more of my colleagues. In several instances I obtained independent estimates, because my figures are so much higher than any I have found on record. For example, Prof. Macfarlane's highest is 5,000 to 7,000 on the square inch, in the pitchers of N. bicalcarata. *W. B. Hemsley.*

(To be continued.)

CROWEA ANGUSTIFOLIA.

THE genus Crowea is closely allied to Eriostemon. The members of both these genera are natives of South Australia, and they brighten the greenhouse with a profusion of flowers at a season when greenhouse flowering subjects are few. Crowea angustifolia (fig. 101) is an old garden species, having been described as long ago as 1849. It produces its reddish-pink flowers freely in the axils of its narrow leaves, so freely indeed that the plants become quite studded with their star-shaped flowers. When shown at a recent meeting of the Royal Horticultural Society by Messrs Jas. Veitch & Sons, Chelsea, the Floral Committee recommended a First-class Certificate for this species. Our illustration has been prepared from specimens supplied us by Messrs. Veitch. Though hardy wooded plants, Croweas may be propagated easily by cuttings if inserted in sand, and then placed under a bell-glass over a moderate degree of bottom-heat.

PLANT PORTRAIT.

RHODODENDRON PERLE DE LEDEBERG.—A derivative from R. ponticum, with large trusses of pink flowers heavily spotted on the uppermost petal. Highly recommended for forcing purposes.—*Revue de l'Horticulture Belge*, April.

NEW OR NOTEWORTHY PLANTS.

CYMBIDIUM SCHRÖDERI, ROLFE, N.SP.[*]

THE appearance of the Chinese Cymbidium Wilsoni about a year ago showed that novelties in the C. giganteum and C. Lowianum group were not exhausted, and now another new species of this group has appeared among Messrs. Sander's Annam importation, and has just flowered in the fine collection of Baron Sir Henry Schröder, at The Dell, Egham. At the first glance it recalls both the species named, having the very hairy lip and strongly striped side lobes of C. grandiflorum, and a median line and zone of red-brown on the front lobe, much resembling C. Lowianum, but narrower and lighter in colour. The flowers are, however, smaller, and the petals narrower than in the latter, while the segments are somewhat lined and minutely dotted with red-brown. On the whole the species is most allied to the North Indian C. giganteum, but the inflorescence is more arcuate, the flower rather smaller, the lip less hairy, and the markings on the front lobe not disposed in blotches, as in that. From the shortness of the inflorescence, as compared with the allied species, and its appearance generally, it is believed that this first inflorescence is not fully developed, but when the plant has had time to become established, we shall be better able to judge of its real character. C. Wilsoni is a smaller plant, with much narrower leaves, but a near ally of the present novelty. *R. A. Rolfe.*

THE GIANT WILLOW APHIS
(LACHNUS VIMINALIS).

AMONGST the Willow aphides, of which there are several species, two stand out very prominently, namely, the Red-legged Willow Aphis (Melanoxanthus salicis, Linnæus) and the Giant Willow Aphis (Lachnus viminalis, Fonscolombe). These are the two largest species, and consequently are readily noticed. The former I have never known to do any damage, but the latter is frequently very destructive.

Although not common, the Giant Willow Aphis is widely distributed. It is usually noticed where it occurs for several seasons: first, its great size attracts attention; secondly, on account of the large size of the colonies; and thirdly, the great damage it so often does to the foliage. It appears in large colonies on the stems and twigs, and never attacks the leaves. These colonies are often a foot in length and from 1 to 3 inches wide. In one colony I have counted as many as 700 individuals, so densely packed together that they all touched one another, not only at the sides but in front and behind.

As a rule, many colonies are found on one tree. A small Goat Willow in my own garden had in October last no fewer than six large colonies and several smaller ones, the large ones from 6 to 8 inches long. The tree is only 9 feet high.

Each colony starts by a single-winged viviparous female, who crawls from a neighbouring mass of the aphides and at once commences to deposit living young. The rate of growth of a colony is rapid. During rather wet and damp weather one was noticed to increase from 5 to 8 inches long in four days, and during that period very many winged females had flown away from it.

In all attacks that I have observed the insects are grouped together side by side, with their heads pointing upwards, not, as stated by Buckton[*] and quoted by myself[†] with all their heads turned downwards. I have frequently watched colonies start, and they always commence with their heads in the same position as when they are in large groups. Now and again a stray specimen may be in the reverse position. These large aphides are always attended at the close of the season by numbers of wasps. The wasps, as noticed by a correspondent, Miss J. Borroughs Norgate,[‡] at Enfield, feed off the honeydew, which drops down on to the leaves beneath the insects. William Curtis also noticed this phenomenon, and also that beetles totally disregarded the honey-dew. Recently I have found that ants will not touch it, as they do the honeydew of other plant-lice; nor will bees feed upon it. The flow of this gummy matter is very copious at certain times, especially in warm weather, but even in dull and rainy weather a considerable quantity is excreted. The flow of this sweet substance is so great that Curtis suggested that "their secretion might be gathered, and by purification converted into the choicest sugar or sugar-candy." This, of course would not be dreamt of at the present day.

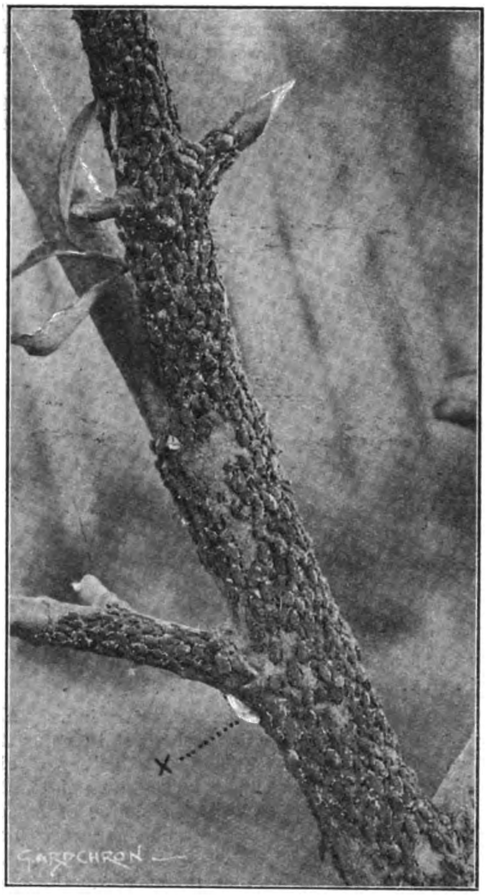


FIG. 102.—GIANT WILLOW APHIS.

The honey-dew soon kills the leaves upon which it falls, not only the leaves of the Willows and Osiers upon which the Lachnus feeds, but those of any other trees, bushes, or plants growing beneath them.

The leaves assume a yellow-and-black appearance and soon become very noticeable even at a distance. Thus the Giant Willow Lachnus do much damage not only to their food plants but to any other plants growing beneath them. This honey-dew frequently coats the ground with a shiny mass. The effects of this pest upon the Willow and Osier are very strange. At one time they seem to do no harm, save indirectly by causing the leaves to fall from the effects of their excretions. At other times, or even at the same time, a neighbouring Willow will be killed outright by the actual sucking of the aphides at the stems and branches. Death of the affected trees when they are small is very frequent if the attack is a persistent one. Buckton records a case where this Lachnus swarmed in such numbers at Carshalton that trees 30 and 40 feet high had been killed by their poisonous influence! But he mentions that a resident horticulturist in Nottinghamshire states that the harm they do the trees is not at all marked. Probably the strange difference in the results seen in their working is due to the condition of the sap, and also the kind of Willow or Osier affected.

Wherever the insects puncture the bark the spot is marked by a reddish-brown stain; these marks may and frequently do occur in rows forming more or less prominent brown streaks on the rind. I have found this Lachnus from June until November, but by far the greatest numbers seem to occur in September and October, when a large quantity of winged females make their appearance. The winged female is very large, often measuring three-fifths of a inch in expanse of wing; the body is about one-fifth to one-fourth of an inch long. In colour the thorax is dark-brown, the abdomen dusky greyish-brown with rows of dark spots, one large one being central. This large dark spot is supposed to be the representative of the curious tubercle seen in the wingless female. The antennæ are short and dark-brown, with the base of the third segment reddish. Legs dark-brown, the base of the fore femora, mid femora, and most of the hind femora bright reddish-brown to almost red; base of the fore and hind tibiæ also reddish; claw double; coxæ or base of the legs black. The proboscis is dark, and reaches to the base of the third coxæ; venter of abdomen ashy-grey with a black spot at the junction of each segment. The cornicles are dark, and very short and conical. The wings are very large, the stigma bronze, the base of the insertion and the cubitus orange-yellow.

The wings in all I have seen are carried pentwise. Mr. Buckton says they sometimes carry them horizontally. When first hatched the wings of the female are opaque, milky-white, and become transparent.

The apterous viviparous female is very marked; it varies from one-sixth to nearly one-fourth of an inch long, and is globular in form, with long legs; the colour is brown with a pile of fine silky grey hairs. The antennæ are short and slender, with reddish base. The abdomen has a row of large black spots, and a large black median tubercle, which projects prominently from the surface. The cornicles are short, black, and stumpy. The legs are long, particularly the hind pair, and similar in colour to the former, but the red bases of the femora are broader. There are also black marks on the thorax, which may or may not be prominent. In certain lights especially when the sun is shining on them, they present a metallic, bronzy appearance. The pupæ are more elongate than the adults, and have very large dorsal tubercles and bright brown wing-cases. The wings when they first moult their skin are like small milky-white projections, very noticeable amongst a colony of the dark-coloured larvæ, pupæ and adults.

---

[*] *Cymbidium Schröderi, n. sp.*—Pseudo-bulbs oblong, sub-compressed, with numerous rings representing the base of the leaf sheaths, up to 6 inches long by over an inch broad. Leaves elongate-linear, rounded or obtuse at the apex, subcoriaceous, up to 2 feet long by 9 lines broad. Scape arcuate, a foot long and bearing five flowers, but apparently not fully developed. Lower bract lanceolate-oblong, acuminate, 1⅓ inch long; the others triangular, acute, and 2 to 3 lines long. Pedicels ¾ to 1½ inch long. Sepals lanceolate-oblong, acute, obscurely carinate, the dorsal somewhat concave, about 1¾ inch long, 6 lines broad. Petals lanceolate, acute, subfalcate, as long as the sepals, 4 lines broad. Lip strongly three-lobed, recurved, 1¼ inch long; side lobes erect, oblong, with a broadly triangular subobtuse apex, an inch long; front lobe recurved, ovate, acute, slightly undulate, 6 to 8 lines long; whole inner surface of lip pubescent or shortly hirsute; disc bearing a pair of fleshy, nearly parallel keels, very prominent in front and hairy throughout. Column clavate, arcuate, with acute margins, over an inch long. Colour of sepals and petals green, somewhat lined and minutely dotted with red-brown. Lip light yellow, with five or six strong red-brown stripes on the side lobes, and the front lobe bearing a narrow median line, and a zone of red-brown in front, similar to that of C. Lowianum, but narrower and lighter in colour; disc bearing a few red-brown spots. Column yellowish-green, lined and dotted with red-brown on the face, and suffused with dark red-purple at the apex. *R. A. Rolfe.*

[*] *Monograph of British Aphides*, p. 55, vol. iii., 1880, Buckton.

[†] *First Report on Economic Zoology*, p. 116, 1903, Theobald.

[‡] Ibid, p. 111.

The winged females remain a little while with the colonies, and then crawl away, and now and then fly off in numbers. Some observers have recorded that the wingless females may migrate *en masse* from one tree to another. They frequently move from one side of a tree to another to get shelter from the wind. The winged females do not always follow the example of the wingless forms, for some may be settled in a colony with their heads downwards, others upwards, the latter being the favourite position.

Unfortunately, I have no description of the oviparous females that occur in the late autumn. I have found what may be their eggs in great masses on the rind of the smaller branches and twigs.

The use of the conical tubercle on the back is not known. The apex has several very minute pores, but is nevertheless apparently blind. It is thought to be an odoriferous gland.

The Giant Willow Aphis, like most others, has been described under several names. The following may be mentioned for reference:—Aphis saligna Walker, Aphis salicis Curtis, and Aphis viminalis Boyer de Fonscolombe.

During last summer I had sent me a number of large Lachnus from Abies pectinata. They cannot be named. The sender said they always leave the Abies at a certain time, and occur again the following year. They bear such a strong resemblance to the Giant Willow Aphis, I cannot help thinking they are one of its stages.

As long ago as the appearance of the sixth volume of the *Linnean Transactions*, we find reference to this insect as being "nearly a quarter of an inch long, one of the largest species." Curtis, the writer of the article says, "towards the end of September multitudes of full-grown insects, winged and otherwise, desert the Willows on which they feed and ramble over every neighbouring object in such a manner that we can handle nothing in the vicinity without crushing some of them."

These large Lachni when crushed give out a rich red stain, which dyes silks pink, and which can easily be extracted, but is never likely to be of any economic value in these days of cheap aniline dyes.

Very strange is the behaviour of this and other species of Lachnus when frightened. If we shake the bough that they are on or touch them with any object however lightly, they stand on their heads and wave their hind legs in the air. These strange acrobatic movements are evidently for frightening off chalcid flies and other enemies when they come to lay their eggs in them or to attack them. These weird movements are still more pronounced in the Black Pine Lachnus (Lachnus fuliginosus), which look like pigmy millers standing on their heads and waving their limbs in the air.

PREVENTION AND TREATMENT.

Obviously there can be no means of preventing the attack of such creatures, which are winged and capable not only of flight but of flying a considerable distance. As they are very noticeable, and as we do not know what effect they may have on a tree, it is just as well always to assume that they are going to do damage, for they only too frequently do so, and destroy them at once.

In low Willows spraying is not necessary. The best way is to rub the colonies off with a gloved hand. Larger trees must be sprayed with strong soft-soap wash, at least 12 lb. of soft-soap to every 100 gallons of soft water. Quassia improves the wash for destroying this aphis as it does that for the Cherry Black Fly, as it cleans the gummy leaves more readily than does plain soft-soap. Number of apterous forms fall off when the spray reaches them if applied with any force, and so the ground must be well wetted with the wash or thickly sprinkled with lime. *Fred. V. Theobald, Wye College.*

CEROPEGIA WOODI.

WE had occasion to illustrate this interesting little species at the time of its first introduction from Natal, when we saw it in the nurseries of Mr. William Bull, at Chelsea. It was named in honour of Mr. Medley Wood, who has done such good service in making known the botanical resources of Natal, and in introducing to the mother-country many of the most interesting and beautiful of the plants of that colony.

The fruit which we now illustrate (fig. 103) from a specimen kindly forwarded by Mr. Greenwood Pim, is what botanists would call a double follicle, consisting of a pair of slender elongated pods bursting along one edge only, and revealing within a number of closely and beautifully packed seeds provided with glistening silky hairs. All this is in accordance with Asclepiads in general; but it is desirable to complete the history of this particular species by the representation of its fruit. The construction of the flower of Asclepiads is complicated, and of such a nature that the agency of insects is required to ensure fertilisation. What particular insect it was that was so obliging in this case we do not know.

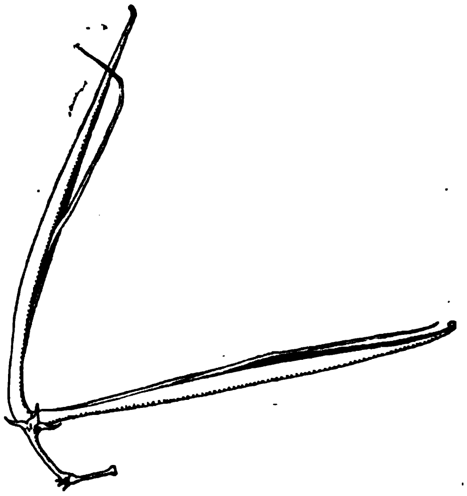


FIG. 103.—SEED-POD OF CEROPEGIA WOODI.

CULTURAL MEMORANDA.

THE WATERING OF PLANTS IN POTS.

WATERING is one of the most important operations in the successful cultivation of plants in pots. It is a regrettable fact that it is difficult to find young gardeners exercising the necessary care and judgment, and studying or knowing the needs of the various plants under their care. Many evergreen plants, such as Crotons, Carnations, Humeas, &c., are more often injured through receiving insufficient water and nourishment at the roots than from all other causes put together. How often does one see a collection of Crotons losing their leaves through being infested with red-spider and thrips during the winter, and all because of dryness and starvation at the roots! Careless watering is responsible for many of the diseased and unhealthy collections of Carnations seen. Humeas are often ruined by being kept too dry at the root. A mistaken idea prevails largely among inexperienced growers that stimulants should not be applied until the plants have thoroughly exhausted the soil in which they are growing. To ascertain if the plants require watering, the pots should be tapped smartly with the knuckles or with a stick. If the soil is dry and requires water, a clear sound will be heard; but if the soil is at all wet a dull sound will result. Should there be any doubt, a good plan is to lift the pot (if the size permits), when one can easily tell by the weight whether the soil is dry or wet. Avoid top watering only, and fill up the pots with water to the rim, especially in the case of those plants that are potted firmly. It has often been said that gardeners have much to learn from trade-growers in the watering and feeding of plants. These growers rely more on the proper watering and feeding of the plants than on fanciful and elaborate mixtures of soil. *John Fleming, Wexham Park, Slough.*

VIOLET CULTURE.

To grow these flowers successfully, annual transplanting is necessary. The month of April is the best period for shifting the plants, except in the extreme North, where early May is soon enough. In the South it is advisable to get the plants in before the hot weather arrives, or much labour will be entailed in watering. As a rule, in those places where Strawberries succeed, Violets are also a success, both enjoying a deep, well-cultivated soil. If the soil is at all light in character, it should receive a liberal dressing of fairly-well-decayed stable or farm-yard manure, which will be better applied if dug in during the early months of the year, and the ground afterwards allowed to settle before planting. With retentive soils nothing is more suitable than partially-decayed, flaky leaf-soil, wood-ashes, or exhausted Mushroom-bed manure, well mixed together. Soot is also a capital fertiliser, and this can either be strewed over the ground previous to forking it back for planting, or a moderate dressing may be applied between the plants in June and the three succeeding months and hoed in. This will also help to ward off red-spider, one of the worst enemies of the Violet plant. The easiest mode of increase is by division of the root, discarding the centre growth and selecting the offshoots with attached roots. This mode of increase is not favoured by some growers, who prefer propagating by cuttings inserted in September, either in boxes or dibbling them in a shady open border. This involves much unnecessary labour, especially where several thousand plants are grown. I have adopted the former plan for a number of years with satisfactory results, and have no hesitation in recommending it to others. The Violet thrives best in the summer months in partial shade, but for successful winter-flowering it is better to allow the plants a position where the sun can reach them. For this reason either a south-east or south-west border should be chosen. If necessary the plants could be shifted in September to a sheltered position facing south. With regard to planting, the single-flowered varieties should be placed 15 to 18 inches apart each way, while 12 inches each way would be sufficient space for double varieties. The plants require frequent attention during the season, especially in dry weather, when a thorough watering should be applied once a week towards evening. Syringing with water after a hot day is extremely beneficial to the plants. Runners must be early removed or the crowns will be small, while the ground should be frequently hoed in order to promote growth.

Varieties of Violets are now numerous, and the flowers are much larger than they were some twenty years ago. The variety Princess of Wales is most extensively grown, and has large, fragrant flowers with long stalks. La France is slightly darker in colour than the former, and is quite as sweet-smelling; Admiral Avellon is strong in growth, very hardy, and with the nearest approach to red flowers. With us this variety is shy in pushing up its flowers until March; California is an old variety, very prolific, with the flowers borne on long stems; Baroness de Rothschild is considered the largest single-flowered variety yet introduced, and is spoken of highly. Wellsiana is still grown by many; it is certainly very free and highly fragrant. Among doubles Marie Louise is still the best; De Parme, which somewhat resembles the old Neapolitan, is very free, as is also the variety Mrs. J. J. Astor, of pink and heliotrope colour. Lady H. Campbell affords beautiful pale lavender flowers, larger than those of either De Parme or Neapolitan, and is a good, compact grower. Comte de Brazza is the best double white, but a trifle shy in producing flowers until the new year is in. All the double varieties succeed better if given glass accommodation from early in October, although during the past winter I have gathered large quantities of flowers out-of-doors, De Parme and Mrs. J. J. Astor producing the best results. *James Mayne, Bicton, Devon.*

ALPINE PLANTS IN POTS.

OUR illustration at fig. 104 has been reproduced from a photograph taken in the Alpine-house at West Down Gardens, near Haslemere. The species of plants represented, we are informed by the gardener, Mr. Eavis, are as follows: Saxifraga apiculata, growing in three pans, each 12 inches in diameter. These are shown in the centre of the picture, and each pan contained about 300 flowers. S. Burseriana major is placed on the right of the picture bearing flowers which measured 3 inches across. The plants are cultivated in pans measuring 8 inches across and 4 inches deep, and containing a compost of loam and sand and limestone chippings. On the left of the picture is S. Boydii alba, growing in pans. They are given similar treatment to that afforded S. Burseriana major. Saxifraga oppositifolia major may be seen just showing between the plants of Veronica buxifolia and V. cupressoides.

A house of Alpine plants cultivated in pots and pans, as are those at West Down, affords much enjoyment to the plant lover early in spring.

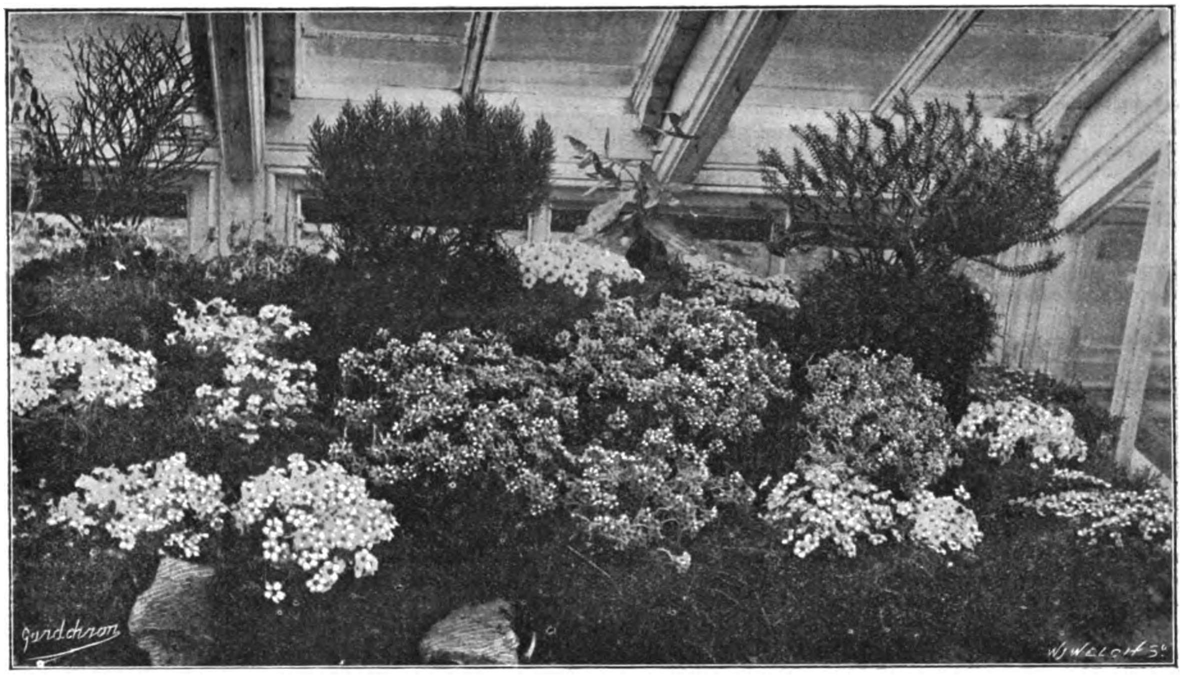


FIG. 104.—GROUP OF ALPINE PLANTS IN POTS.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM × ARGO-MASTERSIANUM.

A VERY interesting and distinct cross between C. Argus and C. Mastersianum has flowered with the Rev. A. H. Upcher, Baconsthorpe Rectory, Holt, Norfolk. In the flower received the features of both parents are readily seen, the long flower-stalk and soft tints being derived from C. Mastersianum, and the conspicuous blackish-purple spotting on the petals and the general form of the flower plainly indicating the influence of C. Argus. The upper sepal is greenish-white, with about twenty emerald-green lines ascending from the base. The petals are emerald-green on the inner halves and tinged with rose-colour on the outer portions, the inner parts bearing numerous warted blackish-purple spots, the marginal ones being ciliate. The lip is whitish tinged with dull rose colour, and the staminode is veined with green.

BRASSIA BRACHIATA.

This species, which was pronounced by Dr. Lindley to be the finest of the genus, is often confused with the best form of Brassia verucosa, but the two are very distinct from each other, and B. brachiata is much the finer. An inflorescence is sent by Mr. Geo. Ellwood, gr. to W. H. Myers, Esq., M.P., Swanmore, Bishop's Waltham, who states that the specimen bore three spikes each with eight flowers. The flowers received have greenish-white sepals 6 inches in length and spotted with chocolate colour at the base. The petals, which are about half as long as the sepals, are similar in colour, but have smaller and more numerous spots. The labellum, which is over an inch and a quarter at the widest part, is primrose colour, and has a brighter yellow tint in the centre, which is studded with more or less warted spots of purplish olive-green. *J. O'B.*

DENDROBIUM WARDIANUM UNDER COOL TREATMENT.

I am induced to send you a few stems with flowers of Dendrobium Wardianum, to show the effect of much cooler treatment than has generally been recommended for this species. About Easter last season I had fifty plants in flower at the same time, and being anxious to prolong the bloom on the plants as long as possible, I removed about half the number of plants to a cool, low, span-roofed greenhouse. Here they remained, suspended near the glass, till their flowering period was over. Observing that the young growths were making satisfactory progress, I decided to leave the plants in this position, the result being that they made strong, plump stems, and retained their leaves till a late period, the stems ripening to a beautiful golden colour. During the winter months the flower-buds gradually developed, and are now in full flower without having been forced. During the summer the plants were not shaded, except by the rafters, &c., and were allowed free circulation of air night and day; they were never syringed, the house being also occupied with show Pelargoniums and tuberous Begonias. The portion of the plants left in the warm-house made long, attenuated growths, and kept losing their bottom leaves. They were removed to the cool-house in the autumn, and now neither the flowers nor the young growths are so far advanced as those grown in the cool-house during last summer. *William Biggie, gr. to her Grace the Dowager Duchess of Northumberland.* [The flowers sent were excellent examples of this popular species. ED.]

LÆLIO-CATTLEYA × DOMINIANA.

A flower of a large, richly-coloured and fragrant form of this fine hybrid is sent by Eustace F. Clark, Esq., Chamonix, Teignmouth, who states that he bought the plant as a small seedling nine years ago from Messrs. Charlesworth & Co., whose small batch of the same raising has been productive in fine forms. The original type was raised by Messrs. Jas. Veitch & Sons between Lælia purpurata and typical Cattleya Dowiana. Those more recently raised by Messrs. Charlesworth were between Lælia purpurata var. formosa and Cattleya Dowiana var. aurea. The flower sent is equal to the best of hybrid Lælio-Cattleyas. Sepals and petals bright purplish-rose finely veined, the broad petals being nearly 4 inches in length. Lip $2\frac{3}{4}$ inches wide, very dark in colour, which is a blending of crimson, purple, and maroon, the base being striped with yellow.

FORESTRY.

TIMBER VALUE OF EXOTIC TREES.

WHEN, a quarter of a century ago, I raised the question of the naturalisation of exotic trees in Germany, I said that the following points must be considered:—

1. Whether the tree furnishes better wood than the native species of the same family; or

2. Whether it will produce in a shorter time larger quantities of wood, even if of less value; or

3. Whether, even if its wood production be the same or inferior in quantity and quality, it excels the native timber either in its slight demands on the soil, in its value as a nurse, in its resistance to climatic conditions, or in some other particular quality.

This system of experiment having been adopted officially, I am now going to illustrate this method with a few examples. To No. 1 belong such trees as Black Walnut, the Caryas, Prunus serotina, the Douglas Fir, and others. As to No. 2, I only mention the American Red Oaks, giving in a shorter time a greater quantity of lesser value than our Oak.

Instead of many instances for No. 3, I only name the Tideland Spruce, Picea sitchensis (Menziesii), which luxuriates in moist, wet, moorish soils where our Spruce perishes.

The article of Mr. Forbes illustrates clearly the old adage, that half the world does not know what is going on in the other half. So I may be allowed to state that the Locust has proved to be the only tree to succeed in the kingdom of Hungary, where vast plains, formerly treeless, are now brought under forest. I quite agree with Mr. Elwes that the Locust is one of the most useful trees in the world, a quick grower on the worst soils, ameliorating these with their roots, giving, after thirty or forty years' growth, large quantities of capital, elastic timber highly valued for many purposes.

The Robinia was introduced into England, according to Aiton, *Hortus Kewensis*, in the year 1640! A hundred years later a member of the Academy in Paris asked if the Government should not begin to study the question of introducing these foreign trees into the forests?

If after another hundred years the Locust could come to the knowledge of William Cobbett, so that he might be able to compare the superior quality of this tree in 1825, which was then hardly known in England, with its condition after two hundred years which have elapsed since its introduction, I very well understand that a man of his character did not write "temperately," as Mr. Elwes says. And though he did not express himself over this novelty of 200 years in a quiet way, he was still right in praising the merits of the Locust; and the blame falls upon the English, not upon Cobbett, if this tree is little planted in Great Britain.

As with the Locust so it is with the Black Walnut, which Mr. Elwes mentions. Compton, Bishop of London, planted at Fulham numerous exotics from North-east America. One of the remnants of that period, which I inspected several times, is a Black Walnut, introduced in 1663 (*Hortus Kewensis*), and planted at Fulham to my knowledge in 1688—217 years ago. Large trees, according to Professor Sargent, begin to be looked for.

We Germans introduced, according to the statistics of the Chamber of Commerce of Hamburgh, during the period of 1893 to 1897 [timber to the amount of] £1,124,067; Mahogany, Cedars, &c., £242,046. We imported more Walnut timber (which we *can* grow) than all the timber used for cabinet work (which we *cannot* grow).

Michaux, who lived for more than thirty years in North America a hundred years ago, directed the attention of the French to Prunus serotina, which is quite hardy, grows on any soil, is highly prized for its rose colour, and is used for the finest cabinet work. It bears beautiful foliage like that of the Portugal Laurel, and produces plentiful berries, which are eagerly sought after by birds.

Monsieur Berger, the late General Inspector for Forests at Brussels, writing a monograph some years ago, addressed his countrymen in the following way: "If you had followed the advice given by Michaux 100 years ago, and planted Prunus serotina, to-day you would be able to pay for the ships of Wheat with the timber of Prunus serotina." In America it is very scarce. And how very few ever heard the name of this tree!

Another common tree, also an introduction of hundreds of years, is Populus canadensis and several species of this genus. A most interesting book on this group was published last year in Paris (*Le Peuplier*), and there we are told that the annual consumption in France of Poplar wood amounts to 250 to 300 million francs (ten to twelve million pounds sterling).

How is it that the nation at large goes on in this [un]happy ignorance, regardless of the treasures which we could grow for ourselves? But instead of planting these valuable trees, introduced some hundred years ago, we read articles about the value of exotic timber; and it would be in this case not so much "exotic" as "indigenous" timber. A good many scientific and practical foresters demonstrated at the last Paris exhibition the insufficiency of the timber supply for Europe (England alone imports annually timber to the value of twenty-five million pounds), and a wood famine is sure to come. Nobody can say when this will happen.

We should do a little more for Forestry. For thirty years I have been a member of the Royal Scottish Arboricultural Society, and for an equal period of time we have humbly asked for a "School of Forestry," and if I look for the actual progress we have made in this quarter of a century, I must confess there is little or none! *John Booth, Corresponding Member of the Royal Horticultural Society, Gross-Lichterfelde, nr. Berlin.*

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

The Orchard House.—The earliest Peach and Nectarine trees will now require attention twice daily in the matter of watering; they should also be given occasionally liberal supplies of liquid-manure, and be further encouraged to develop by the frequent application of a top-dressing of a rich, well-mixed compost, composed of fibrous loam, horse-droppings, and bone meal. Trees that were moved into larger pots, or any that are making too much growth, will not require these manurial applications. The fruits should be thinned to the requisite number as soon as the stoning period is passed; at the same time keep the lateral shoots closely pinched. Red spider should be prevented from making its appearance by vigorously syringing the trees twice daily when the weather is favourable, and continuing until the fruits show signs of ripening. As the fruits develop expose them to the light as much as possible, and gradually increase the amount of ventilation during the night, closing the ventilators in the morning until the temperature rises to 68° or 70°, when air should be again admitted, and regulated according to the temperature of the house. The latest trees to develop and which are grown in unheated houses should be fumigated as soon as they pass out of the flower stage, or when the first signs of green fly appear. Disbud the trees according as they require it and remove any shoots which were overlooked at the time of pruning. Pinch out the points of the strongest shoots at the fifth or sixth leaf from their base, allowing the weakest shoots a little more time before stopping. If the houses are unheated, let all the damping and syringing of the trees be carried out during the early part of the day in order to allow the foliage to become dry before night-time, until all danger from cold nights is passed. Give careful attention to the ventilation of the house and to the watering of the trees.

Pears and Apples.—As soon as it can be seen which fruits are swelling and which are likely to take the lead, they should be thinned in number, and when finally thinning allow but one fruit to remain on each spur. Caution must be exercised in not finally thinning the fruits too soon, for in some cases, and when least expected, the fruits drop off without any apparent reason. After the fruit is set the same care and attention are necessary when watering the trees and when ventilating the houses as in the case of Peaches. Keep down green-fly by fumigating, and examine any curled leaves for grub, which will otherwise soon do a lot of mischief.

Plums and Cherries.—The latter fruit will develop more quickly than the Plums after the stoning stage is passed, and after the fruits are ripe should, if grown in pots, be removed to a cooler and drier atmosphere, where the berries will hang for some considerable time. Pinch out the points of the shoots as often as they need it, and keep a watchful eye for curled leaves. Black-fly often attacks Cherry-trees; this pest is difficult to get rid of unless taken in time. It can be eradicated if the points of the shoots are dipped in some approved insecticide, or if the trees be fumigated twice with XL-All Insecticide. This fumigating must be done before the fruits change colour.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Vanda Sanderiana.—An importation of this grand Orchid having recently been sold by auction, a few hints on its cultivation may be of service. Newly-imported plants should not be fully exposed to the light or much heat and moisture during the first few weeks, or excessive shrivelling and early loss of many of the lower leaves may result. Place the plants upright in a position where extra shading may be afforded them in a house having an intermediate temperature, and as the leaves regain their rigidity, utilise the extra shading only during the brightest part of the day. In course of time the plants will make roots, and should then be fixed in their receptacles by tying some of the old roots to the bars of the baskets, which should be provided with wires for suspending. Almost fill the baskets with drainage material, and surface with fresh sphagnum-moss. Suspend the plants on the shadier side of the East Indian-house, encouraging the sphagnum-moss to grow, first with partial waterings, and afterwards, as root-action increases, afford a frequent and plentiful supply. In the autumn, when the roots begin to seal at the ends, decrease the supply of water, and continue this practice until the winter, when very infrequent supplies will be sufficient to keep the leaves from shrivelling.

Vanda cærulea.—Some excellent consignments of this plant have also come to hand this season, and if a little extra care be given them, the plants should yield excellent flowers during several succeeding seasons. Newly-imported plants may be fixed in pots filled almost to the rims with potsherds, and be placed on a stage in an intermediate-house where extra shade can be afforded. Provided the conditions of the house are suitable, no direct watering will be needed until root-action occurs, but the stage should be kept moistened. When the roots have become active, place a 2-inch layer of freshly gathered sphagnum-moss on the drainage material, and remove the plants to a lighter and better ventilated position in the house, keeping the sphagnum-moss and surroundings in a moist condition. Decrease the water supply as soon as root-action declines, and during the winter months very infrequent doses will be sufficient. The majority of the Vanda-like plants that were afforded fresh sphagnum-moss early in last month will now need sufficient waterings to keep the sphagnum-moss in a growing condition, and should any of the moss have failed to start into growth, let it be picked out and fresh substituted for it.

Lælia majalis is now becoming active again, and therefore requires generous treatment. It may be grown on blocks, rafts, or in baskets, but whichever method is employed a very small quantity of material should be laid about its roots. The plants thrive best when suspended in an intermediate-house near to the upper ventilators, and as soon as a new series of roots appear liberal supplies of water will be needed. If the plants are suspended where they can be syringed several times each day without fear of causing injury to other plants, it will be to their advantage. Growth is very rapid, flowers, leaves and pseudo-bulbs developing together, and by the time the blooms are over the limit of growth is reached. The plants will need copious supplies of water until the autumn, but little or none afterwards, until just before growth commences in the following season.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Seed Sowing, &c.—Seeds should now be sown of Helichrysums, Grasses, Sunflowers, Lavatera, annual Chrysanthemums, and Coreopsis. Afford the seed-bed a slight protection from severe weather. Seedlings of Asters, Carnations, Alonsoas, &c., should be "pricked off" when they are large enough to handle. Make preparations for placing Pelargoniums and other bedding-plants into cold frames where they may become hardy. If these plants have been growing in a shady position or a long distance from the glass, they will need shading from bright sunshine for some days to prevent their being scorched.

The Wild Garden.—Proceed with the planting of hardy plants. Cimicifugas are stately subjects, and are suitable for planting in sunny or shady positions. C. cordifolia has dark-coloured stems, grows 3 to 4 feet in height, and flowers from August to October. The plant thrives in a damp situation. C. simplex is also a fine plant. Other good varieties are C. racemosa and C. davurica. Lythrum virgatum var. Rose Queen is the finest of the Loosestrifes. It makes a brilliant display in a wet situation from July to September. Lysimachia clethroides is a good white-flowering plant, in flower during July. Monarda didyma revels in a sunny, damp situation, as do also Ourisia coccinea and Podophyllum Emodi. Cuttings of Galega officinalis compacta Snowdrift that were inserted during last autumn in a cold frame will be ready to be transplanted to their permanent quarters. The plant is very effective in masses. G. o. Hartlandii is also a desirable plant. Michauxia campanuloides should now be planted in a warm sheltered position. The present is a suitable time to sow seeds of this plant.

The Rock Garden.—Species of Cistus are useful subjects for planting on dry banks and on tops of walls. Cuttings of these that were inserted in a cold frame during last autumn should now be suitably rooted and ready for planting. They will thrive and grow into bushy plants if simply dibbled into the soil of steep banks. When planted in rich soil these plants soon succumb to the influence of frost. The flowers are mostly of diurnal duration, but being freely produced they make a fine show in early summer. C. florentinus is one of the best and most easily grown; C. laurifolius is a hardy and perfectly distinct species; C. crispus forms a compact bush, and produces flowers of a deep rose colour 1½ inch across; its newly-opened crinkled blooms attract much attention. C. algarvensis has bright yellow-coloured flowers. Other good kinds are C. hirsutus, C. ladaniferus, C. lusitanicus, and C. salviæfolius.

Helianthemums require much the same treatment as the above. Rooted cuttings planted now will soon make a bright show.

Gypsophila paniculata is a useful plant for indoor adornment; plants are easily raised from seed. The double variety is a welcome addition to borders. G. p. Steveni is also a good variety. G. repens monstrosa is useful for draping over rock-work. G. repens rosea is a charming rock plant.

Hypericums will thrive in any ordinary garden soil. Plants propagated in a cold frame last autumn will now be sturdy. H. reptans is a good rock-garden plant, its growth quickly covering large stones; H. repens is a smaller-growing species; H. Moserianum makes a fine bush, growing from 2 to 3 feet high, and produces flowers freely; H. M. tricolor is a choice variety, and when planted in a sunny nook the colour of the flower develops well; H. Androsæmum is showy, and the old favourite H. calycinum is useful for planting under trees.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Carnations for Flowering in Winter.—Cuttings that were propagated early in January should now be sturdy young plants ready for putting into 6-inch pots. Previous to being potted the plants should be closely examined for aphis or red spider, any traces of which must be removed by syringing the plants with Quassia extract or immersing them in the liquid. It is essential to success that the plants be kept quite free from insect pests. The potting at this stage is the final one, and the compost should be carefully prepared. Where good yellow fibrous loam is procurable it is undoubtedly the best material for Carnations, but where this is not obtainable, the best must be made of that which is available. Very stiff and heavy soil should have a quantity of road grit or scrapings incorporated with it to bring it to a degree of lightness and porosity which is needful for Carnations. It will also be necessary to add leaf-soil, and a proportionate amount of silver sand. Sufficient of Thomson's Plant Manure to fill a 6-inch pot may be added to each barrow load of soil, but beyond this no artificial manure should be used because better results will be got from judicious feeding before the flowering stage than if the soil were overdone with manures at the time of potting. Let the plants be kept for a time in a cool frame with only a moderate degree of ventilation, but as growth develops and the weather becomes warmer the light may be removed entirely from them, except during heavy rain. The plants will require stopping occasionally to induce a bushy habit, but in the case of those required to yield a supply of flowers in October this operation must cease after the second week in June.

General Propagation.—If the propagation of indoor plants has been carried out as previously advised, most of them are now well rooted, and should receive the attention they require. Economy of space is an important matter in most gardens, and great advantage is gained by selecting the number of plants that can be properly cultivated, so that those that are not wanted may be thrown away, as their retention for an indefinite time would impart an appearance of neglect to the houses.

Begonias Gloire de Lorraine and Turnford Hall.—A batch of cuttings for general use should now be inserted. They will make roots readily in cocoa-nut fibre or in soil in a warm atmosphere. Select growths from the base of the plants for the making of cuttings.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Apricot-trees.—Examine the trees, and in cases where the fruits have "set" several together in clusters, thin them out, removing those which would be likely to get crushed against the wall or between the shoots. The degree to which they should be thinned will depend upon the purpose for which the fruits are required, also upon the variety. If fruits of the largest size are required from such large-fruiting varieties as Luizet, St. Ambroise, Grosse Pêche, and Royal, only one fruit should be left to every 6 square inches of space. Smaller fruiting varieties, including Breda, Powell's Late, and Musch-Musch need not be thinned so severely. The fruits removed at the final thinning will be useful for bottling purposes. Let the thinning be done slowly and at several operations. Any shoot which is much stronger and more vigorous than the others may be cropped more heavily. Although Apricot-trees seem already to have set good crops of fruit, the protection should be kept available for use for some time longer, as there may yet be frost or cold winds which would injure the fruits. The work of disbudding the shoots may also be proceeded with, and by reserving only those buds which are necessary to produce shoots or spurs, a considerable amount of labour, and the detrimental use of the knife subsequently, will be prevented. This work should be extended over a period of two weeks. Do not expose the young fruits severely at the first operation. Shoots growing straight out at right angles to the wall, and termed "forerights," are generally useless and should be rubbed off. Clusters of shoots proceeding from the terminal end of the spurs should be thinned. If a growth can be retained at the base of a long, barren spur, this should be done, removing the spur down to the growth by means of a sharp knife. If a number of spurs are treated in this way annually, the trees will contain more young bearing wood than they would otherwise do. Spurs removed at this season of the year are not so liable to be attacked by canker as if done earlier. Young trees should have their leading shoots continued, and along the growth made last season leave two or three shoots for furnishing the wall-space. Retain also sufficient buds to form fruit-spurs, which should be pinched at the third leaf, removing fore-right and badly-placed buds. The presence of maggots may be detected by the twisted appearance of several leaves together, and if any are found they should be crushed between finger and thumb.

Cherry-trees on Walls.—Trees which bear an abundance of bloom-buds may with safety have a quantity of them removed, thereby strengthening those that remain. Apply a sprinkling of muriate of potash about the roots during showery weather to strengthen the flowers, and thus help in obtaining a good "set."

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Mushrooms.—The material for forming the beds should be spread out thinly in an open-sided structure where the manure will not be exposed to rains. Let each consignment from the stables be treated in this way until the quantity considered necessary to form the bed has been collected. When this has been done, and in order to allow some of the moisture to escape, and to prevent an undue degree of heat arising afterwards, form the manure into a conical-shaped heap, and turn it over at intervals of a few days. Do not be too exacting in the removal of all the litter, nor in allowing too much of the moisture to escape, because the presence of a certain amount is much to be preferred to the other extreme when water has to be added. Close attention must be given in order to have the material in that intermediate stage between a wet and dry condition. The removal of successful and unsuccessful beds affords good object-lessons. The material from beds which have been productive will be found bright in colour, moderately dry, and freely interspersed with a network of white threads with little signs of decay. Although the Mushroom, like many other fungi, is supposed only to exist upon decaying matter, yet in successful cultivation decomposition must not be of a too rapid nature. Therefore it is necessary to avoid excess of heat and moisture. Only the best spawn in a fresh condition is worth utilising. From this season onwards choose for beds out-of-doors, positions that are cool, though provided with shelter and shade.

Beetroot—Sow seeds of the variety Dell's Crimson, and ten days later make a sowing of Blood Red, Perfection and Pragnell's Exhibition. Allow distances of 18 inches between the lines, not with the idea of producing large roots, which are seldom appreciated, but with the object of securing thorough maturity and colour in roots of medium size. Sow the seeds a little deeper in the ground than advised for Carrots, but in other respects the practice should be the same.

Spring Cabbage.—The general appearance of this important crop is all that could be desired. Ellams's Early Dwarf is the variety relied upon here, and at present we are cutting nice little compact "heads," with full and hard centres. In the early batch of between two and three thousand plants I have not been able to detect a dozen plants that have run to seed.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Apr. 24—Easter Monday. Bank Holiday.
TUESDAY, Apr. 25 { Royal Horticultural Society's Committees Meet, and National Auricula and Primula Society's Show combined.
FRIDAY, Apr. 28—Royal Botanic Society Meet.

SALES FOR THE WEEK.

WEDNESDAY NEXT—
Hardy Border and Herbaceous Plants, Roses, Palms, Plants, Perennials, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12 o'clock.
FRIDAY NEXT—
Trade Sales of imported Orchids; also 6,500 O. crispum, 1,200 O. Pescatorei, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —49·7°.

Actual Temperatures:—
London.—*Tuesday, April* 18 (6 p.m.): Max. 47°; Min. 37°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Wednesday, Apr.* 19 (10 a.m.): Bar., 29·9; Temp., 44°. Hailstorms.
Provinces.—*Tuesday, April* 18 (6 p.m.): Max. 48°, S. Devon; Min. 40°, N.E. Scotland.

Jonathan Rashleigh. The death, at the age of eighty-five, removes another of our oldest and most valued contributors. Mr. Rashleigh, who died at Menabilly, Cornwall, on the 12th inst., was an enthusiast in gardening matters and the possessor of one of the most interesting gardens in the county. He was born on January 7, 1820, and was one of the best-known men in Cornwall. He was educated at Harrow and at Balliol College, Oxford. Among his closest friends were Archbishop Temple, Lord Iddesleigh, Lord Coleridge, Sir Thomas Acland, and the Hon. and Rev. J. Townsend Poscawen, all of whom predeceased him. Mr. Rashleigh took an active part in Cornwall county affairs, and had been High Sheriff. He was twice married, and leaves several children. Whilst a lover of plants in general, he was a specialist so far as Conifers, Bamboos, and Eucalypti are concerned, and his garden is specially rich in species, which he collected with great pains and judgment. The favourable climatal conditions of that part of Cornwall enabled him to grow many species which are tender in other parts of the country, or are even unable to withstand a ruder climate of other counties. His communications to this journal were frequent, the last note being one in his own handwriting quite recently published relating to the measurements of certain Cedars, especially those in the gardens of his old friend the late Mr. Baker, of Bayfordbury, Herts.

Illustrations of Palms, Eucalypti, Tree-Ferns, Dracænas, Mexican and other Pines, growing at Menabilly have often been given in our columns. Mr. Rashleigh was a representative of a type which, in spite of the greatly extended interest in gardening generally, unfortunately does not increase in proportion. We allude to those who are not only "fond of flowers," but are not satisfied till they know something about them.

German South-West Africa (see Supplementary Illustration).—Public attention has lately been attracted to this corner of the globe on account of the difficulties which the German colonists have had to encounter with the natives. The district lies to the north-west of our Cape Colony, between it and the Portuguese possessions on the west coast. The German Government are doing their best to develop the resources of the Colony, and to encourage, where the conditions are favourable, afforestation and the culture of useful plants. Our valued correspondent, Herr Dinter, who was formerly at La Mortola, holds a high position in the Forest Department, and, as we have previously announced, will shortly return for a short time to Germany. His address will be Bautzen, Saxony. To him we are indebted for the characteristic photographs now reproduced. They show that however sterile the soil may be in some places, it is rich enough to support the growth of fine species of Ficus, Acacia and other trees. Other photographs, not reproduced, show the extraordinarily rapid growth of some young trees planted out under Mr. Dinter's care. To the botanist this district will always have a special interest as the home of the Welwitschia, that uncouth-looking plant, which looks as if it might be a denizen of another world, very different from this, and the interest attaching to which, great as it was on its first discovery, has not subsided even now.

Linnean Society.—The next general meeting of the Society will be held on Thursday, May 4, 1905, at 8 p.m. Papers:—Mr. A. G. Tansley, M.A., F.Z.S.: "Œcology, its Present Position and Probable Development." Mr. R. N. Rudmore Brown: "The Flora of Gough Island" (communicated by Mr. W. Botting Hemsley, F.R.S., F.L.S.).

The London Geological Field Class, conducted by Professor Seeley, F.R.S., begins its twentieth year's season on Saturday, April 29, with a visit to the North Downs at Betchworth. The Field Class, which is carried on continuously on the Saturday afternoons in May, June and July, affords practical teaching in Geology by studying direct from Nature the structure and modes of occurrence of the rocks in the basin of the Thames and adjacent country. Further particulars may be obtained from the Secretary, J. W. Jarvis, F.G.S., St. Mark's College, Chelsea, London, S.W.

The Elder.—There is a saying that when the Elder is in bloom the summer is half over. As we gathered a few days since fully-expanded flowers of the Golden Elder, we trust the saying does not apply to this particular species. Near by were clusters of the common Elder, advanced indeed, but not more than sufficiently so to indicate that summer is approaching. By the way, we may remind the reader that the Golden Elder is a variety of the Canadian species Sambucus, and not of the common European species. The inflorescence of the latter is a flat-topped, spreading, much-branched cyme, whilst in the Canadian Elder the flowers are arranged in elongated panicled cymes. To ensure the full colouration of the leaves it is necessary to cut the bush hard back in late autumn or early spring.

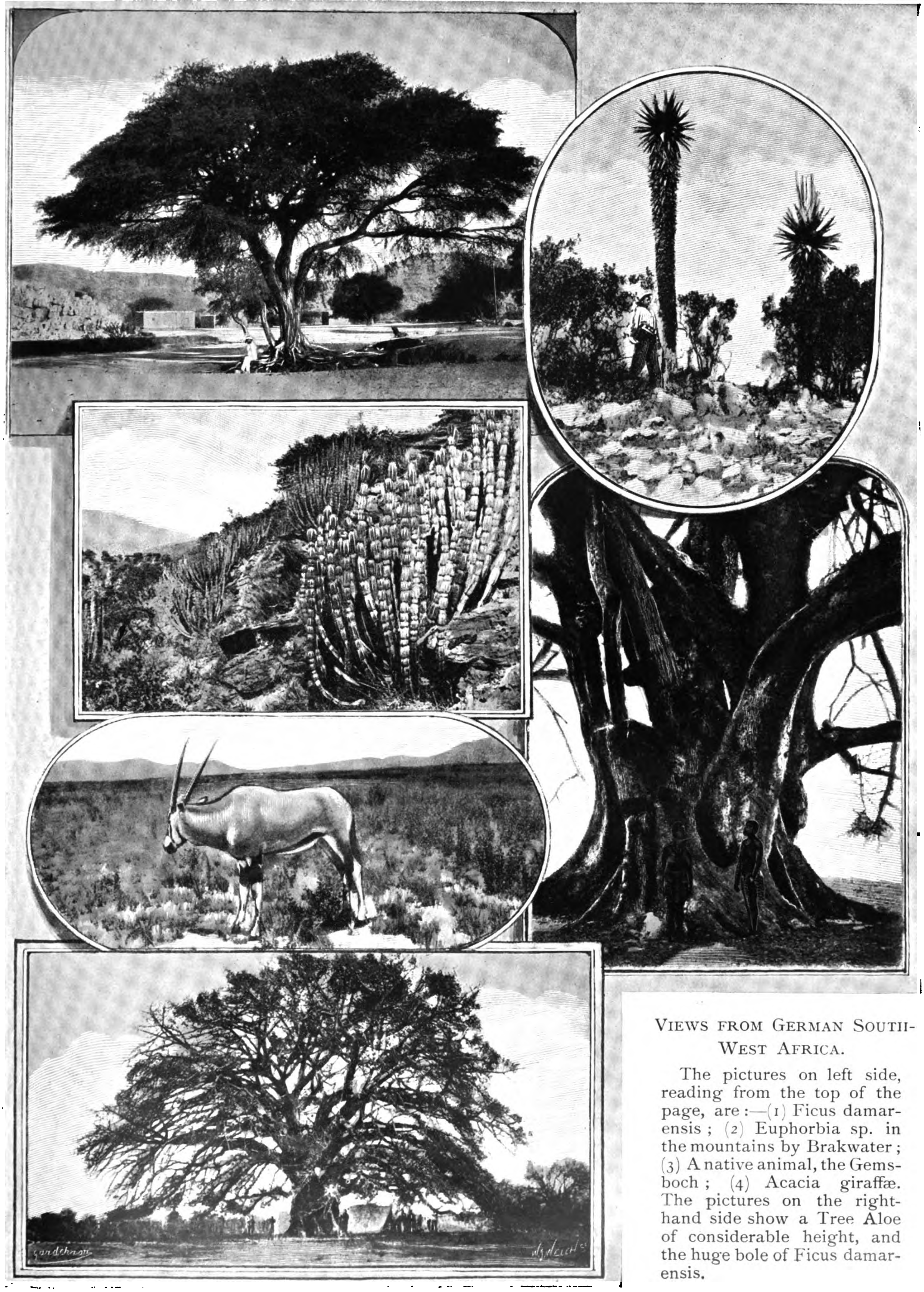
The Board of Agriculture.—The activity displayed in recent years by the Board of Agriculture is most praiseworthy. Following in the wake of the marvellous United States Department of Agriculture, our own authorities, by means of leaflets and other publications, now circulate information of great value to farmers and gardeners. Although that information has been and is to a large extent supplied through the class-journals, yet it is quite clear either that those periodicals do not reach the great body of agriculturists, or that the cultivators pay little heed to what is put before them, even when the subject is of the utmost moment to them in the conduct of their business. Improved methods of education are gradually working a reform in this matter. In the meantime the Government Agricultural Department is, as we have said, doing good work by diffusing as widely as possible serviceable information. As an example of this we may mention a series of coloured diagrams illustrating some of the more common diseases of trees in this country, together with sheets of explanatory letterpress. The illustrations before us represent the external appearance of several of the more common fungi, whilst the text is not only explanatory, but it furnishes in a concise form directions for the prevention and if not for the cure of the disease, at least for the palliation of its effects. As a matter of minor importance it may be incidentally mentioned that the arrangement of the scales of the cones in the various conifers figured is peculiar. We hope the Board will quickly follow up this series with others of a similar character.

National Dahlia Society.—We have received a supplement to the Official Catalogue of this Society, which brings the list of varieties up to date by including all the newer introductions and those which will be sent out into commerce for the first time in 1905.

The Nurserymen, Market Gardeners' and General Hailstorm Insurance Corporation, Ltd.—The tenth annual general meeting of this company was held at the registered offices, 41 and 42, King Street, Covent Garden, W.C., on Friday the 7th inst., when Mr. Harry J. Veitch presided. The progress of the Company has been continued, the income for the year having increased to £2964 8*s*. 1*d*. The assets of the company now amount to £20,229 15*s*. 4*d*., and the reserve fund now stands at £9,000. The usual dividend of 5 per cent. and bonus of 2½ per cent. was agreed to. It was noted that the company still had the same chairman, directors and secretary as at its formation.

Mr. T. W. Briscoe, who for some time past has had charge of the collection of Orchids in the Royal Gardens, Kew, has been appointed by Messrs. Jas. Veitch & Sons, Ltd., to undertake the management of the Orchids at Langley in succession to Mr. Seden.

Armstrong College, Newcastle-upon-Tyne.—With a view of obtaining accurate records of the growth and development of ordinary forest trees in the north of England, an attempt is being made by the Forestry Lecturer in this College to arrange for the careful measurement and observation, at suitable intervals, of small sample plots in Estate Woodlands which illustrate the growth of Oak, Beech, Ash, Larch, Scotch Pine, Spruce and other forest trees of economic importance. It is hoped by such means to arrive at definite conclusions as to the value of the various species of timber trees grown in the north of England and the volume of timber which can be produced per acre on different soils and situations by various methods of thinning and under the influence of the varying climatic conditions prevailing on the eastern and western sides of the four northern counties. The size of individual areas suggested as suitable for the purpose are not less than one quarter or more than an acre in extent, the exact size being determined in each case by the crop on the ground, conditions of growth, &c. In the event of a sample plot being laid out it will be necessary for the following conditions to be carefully observed:—(1) The preservation of the crop or sample plot in the same condition in which it existed at the time of measurement, by allowing all trees to stand until mature, with the exception of necessary thinnings which may be advised from time to time for the benefit of the main crop. (2) The retention of all trees standing round the edges of the sample plot until the latter is ripe, so that sudden isolation may not cause damage by wind. (3) The notifying of all deaths or windfalls occurring on the



VIEWS FROM GERMAN SOUTH-WEST AFRICA.

The pictures on left side, reading from the top of the page, are :—(1) Ficus damarensis ; (2) Euphorbia sp. in the mountains by Brakwater ; (3) A native animal, the Gemsboch ; (4) Acacia giraffæ. The pictures on the right-hand side show a Tree Aloe of considerable height, and the huge bole of Ficus damarensis.

sample plots to the Forestry Expert of the College, and the granting of necessary facilities for its inspection. Several woodland proprietors have already given their support to the above scheme, full particulars of which may be obtained from Mr. A. C. FORBES, Lecturer on Forestry, Armstrong College, Newcastle-upon-Tyne, and to whom those willing to assist in the work should apply.

PRESENTATION TO MR. SAMUEL ARNOTT.—Our readers will be interested to learn that our correspondent, Mr. SAMUEL ARNOTT, has been presented by his fellow-townsman of Carsethorn, in which place he has resided during the past twenty-one years, with a handsome gold watch, together with an elegant silver tea-kettle and heating-lamp for Mrs. ARNOTT. Mr. ARNOTT, who is removing to Maxwelltown, was the guest of his friends and neighbours at a public dinner held in Kirkbean School on Friday, April 7, on which occasion the presentation was made.

GROUSE DISEASE.—The President of the Board of Agriculture and Fisheries has appointed a Committee to enquire into the nature and causes of Grouse disease, and to report whether any, and if so what, preventive or remedial measures can with advantage be taken with respect to it. The Committee will be constituted as follows:—The Marquis of Tullibardine, M.V.O., D.S.O., Earl de Grey, K.C.V.O., Lord Henry Montague Douglas-Scott, the Lord Lovat, C.V.O., C.B., D.S.O., Mr. W. Dudley W. Drummond, Mr. James Graham, The Mackintosh of Mackintosh, Mr. Ronald Craufurd Munro-Ferguson, M.P., Mr. Reginald Henry Rimington-Wilson, Dr. William Somerville, an assistant-secretary to the Board of Agriculture and Fisheries. The Chairman of the Committee will be Lord Lovat, and Mr. A. S. Leslie, Secretary. The cost of the enquiry will be defrayed by subscription, and it is guaranteed that no charge in respect of it will fall upon public funds.

GRAFTING AND ITS EFFECTS.—In the older text-books it was laid down that grafting produced no perceptible change in either stock or scion. If this were the case the reasons for grafting would be comparatively slight. More recent investigations have shown, as might have been expected, both physiological and structural changes. M. COLIN has lately been examining the structural changes in the stalk bearing the bunch in some grapes grown for wine-making and finds a difference in the size, number and distribution of the fibro-vascular strands and of the liber-cells.

PUBLICATIONS RECEIVED.—*Memoirs of the Royal Caledonian Horticultural Society*. This is the first part of a new series. The contents include Alpine Plants, by R. Lindsay; Hybridisation, by Dr. Wilson; Roses; by the late Hugh Dickson, &c.—*Meteorological Notes and Remarks for* 1904 by Jas. Whitton. These are from records kept at Queen's Park, Glasgow. The rainfall was slightly under average; with regard to the temperature the averages were slightly higher than those of the preceding year.—*The Estate Magazine*, supplement to the *Country Gentlemen's Estate Book*. April. Contents: The Ellesmere Estates, with portrait of the Earl of Ellesmere; Japanese Larch and Larch Diseases, by J. Simpson; and Notes on Gardening and Agriculture.—*Bulletin of the Department of Agriculture, Jamaica*. March. Contents: Citronella Grass in Ceylon, Half-way Tree, Jamaica; Diseases of Cocoanuts, Experiments with Sugar-cane, and Culture of Ornamental Shrubs and Climbers. — *Western Australian Year-Book for* 1902–4. By Malcolm Fraser. This should be studied by all interested in the Colony, as it gives an excellent hint of its past history and present conditions. The flora and forest resources are duly considered. — From the Ontario Agricultural College: Bulletin 133, *An Experimental Shipment of Fruit to Winnipeg*, by J. B. Reynolds, and 140, *The Results of Field Experiments with Farm Crops*, by C. A. Zavitz.—*Journal de la Société d'Horticulture du Japon*; January and February. This periodical contains short notes printed in French, and longer articles in Japanese.—From the New York Agricultural Experiment Station: Bulletin No. 266, *Seed Selection According to Specific Gravity*, by V. A. Clark. — *Journal d'Horticulture de Culture Maraîchère et de Viticulture de la Suisse Romande*. A monthly paper published by the professors of the École d'Horticulture, certain amateurs and professionals, and l'Association des anciens Élèves de l'École. —*Nuovo Giornale Botanico Italiano*. Vol. xii., No. 1.—*Bulletino de'la Società Botanica Italiana*. December, 1904, and January and February, 1905.

NOTICES OF BOOKS.

THE CULTIVATION AND PREPARATION OF PARA RUBBER. By W. H. Johnson, F.L.S., F.R.H.S., Director of Agriculture, Gold Coast Colony, West Africa. Illustrated. (Crosby Lockwood & Co.) 8vo, pp. 99, 7*s*. 6*d*. net.

ANYTHING calculated to extend the cultivation of the best rubber-producing plants and to increase the supplies of a substance which has been for many years, and is still, increasing in demand for the thousand-and-one uses to which rubber is now put, is to be welcomed as a contribution towards allaying some of the anxiety that has long been felt as to the prospect of future supplies, or the discovery of a real substitute. No substitutes, however, can ever be expected to approach in value and usefulness that particular kind of rubber upon which the reputation of the article was originally founded; consequently the book before us is all the more welcome as it deals only with the Para Rubber-plant. From this tree (Hevea) the best quality of rubber is still obtained to-day, as it was on the introduction of the substance into this country in 1770, when a square half-inch of Para rubber was sold at 3*s*., and was to be had at one place only in London, its wonderful property being that of "wiping from paper the marks of a black-lead pencil."

That Para rubber still rules the market, and this because of its very durable quality, which defies not only substitutes but even competitors, is proved by Mr. Johnson's quotation of prices from London experts, where, on p. 9, he shows that Para rubber, obtained from cultivated plants grown in Ceylon, had so recently as September, 1904, realised the record price of 5*s*. 6*d*. per lb., and further, from various samples submitted for valuation at different dates from July, 1902, to January, 1903, fine Ceylon-grown Para fetched on an average 6*d*. per lb. more than hard-cured fine Para prepared in its native country. These are facts of considerable interest both to the planter as well as to the broker and manufacturer. The great drawback to the introduction of the Para plant (Hevea brasiliensis) into British Colonies or possessions hitherto has been the difficulty of raising plants from seeds owing to the oil contained in them, which, turning rancid, has prevented germination; and, further, the Hevea being a large tree, some years must of necessity elapse before any return could be obtained from the yield of rubber. So far back as 1873 the first experiments were made in transmitting seeds and cuttings of Hevea rubber plants from Kew to India, and about three years later a large consignment was sent to Ceylon, 90 per cent. of the plants reaching their destination in excellent condition. From these plants, which grew well, forming handsome spreading trees, large quantities of cuttings were struck and distributed.

Mr. Johnson tell us, "as the result of this introduction, an important agricultural industry has developed in the Malay Peninsula and Ceylon. . . . It is estimated that there are now about 12,000 acres planted with this tree in Ceylon, while in the Malay Peninsula there is a still larger area under Para rubber cultivation. The small amount of cultural skill required to successfully cultivate the Para rubber tree, coupled with the high prices paid for the rubber which the cultivated trees produce in comparison with that paid for other grades of rubber, has no doubt largely influenced planters in selecting the Para tree in preference to other rubber-producing plants."

It is satisfactory to know, on the authority of Mr. Johnson, that "in the Gold Coast, West Africa, this tree, grown in experimental plots in the Botanic Garden, Aburi, which is situated 1,500 feet above sea-level, and where the average mean temperature is about 81·5° Fahr., and the annual average rainfall 47 inches, promises better results than any other rubber-producing plant, indigenous or exotic." Moreover, to sum up this part of the question, Mr. Johnson further says: "The manner in which this tree has adapted itself to the various climatic conditions obtaining in the different countries mentioned is almost unique in tropical cultivation," the countries referred to besides the Gold Coast being India, Jamaica, Dominica, St. Vincent, Grenada, Trinidad, Zanzibar, Uganda Protectorate, and Mozambique.

In the third chapter of the book, which is devoted to the cultivation of the tree, we find some interesting notes on propagation, in which the merits and demerits of seeds *versus* cuttings are discussed, and information is afforded as to the proper site for a plantation, the distance apart to plant the trees, and the methods of transplanting.

The next chapter, which is very brief, is devoted to insect pests and fungoid diseases, the brevity being fortunately indicative of the scarcity of these pests, for we are informed that notwithstanding that certain insects and fungi are found on the plants, "no disease has up to the present time been discovered seriously to affect this tree under cultivation."

The succeeding chapters, which are devoted respectively to the collection of the rubber, the preparation of the rubber from the latex, and the yield from cultivated trees, will be especially useful to those who contemplate embarking in this important branch of culture; as will also the succeeding chapter, on the "Establishment and Maintenance of a Para Rubber Plantation." The concluding chapter, on the "Commercial Value of the Oil in Hevea Seeds," is interesting; and though it is stated that the oil might be used for the various purposes to which Linseed oil is now applied, and the residue of the seeds used as cattle food, it would seem to us that with the numerous oil-seeds now in the market, and owing to the presumably purgative character of the oil of Euphorbiaceous seeds, as shown in the Castor-oil, Croton-oil, Jatropha, and other allied plants, it would be some time before the seeds of the Hevea cleared themselves from the evil reputation of its allies.

In everything connected with Gold Coast plants, especially those having any economic value or interest, Mr. Johnson speaks with considerable weight, as he has had a very long experience in Tropical Africa, and holds the position of Director of Agriculture in the Gold Coast Colony, besides which, in 1902, he was, as stated on the title-page, commissioned by Government to visit Ceylon to study the methods employed there in the cultivation and preparation of Para rubber and other agricultural staples for market, with a view to introduce them into West Africa. The outcome of this visit is embodied in the book before us.

PICTORIAL, PRACTICAL TREE AND SHRUB CULTURE. By Walter Wright and W. Dallimore. (Cassell & Co.). 1*s*.

The title-page further states that this is a "practical manual giving directions for propagating, planting, and pruning trees and shrubs, and selections for various purposes," and the contents amply justify the title. In the preface we are told that the letterpress is wholly the work of Mr. W. Dallimore. We congratulate him and the editor on the production of an admirable little book. Its size does not admit of much elaboration, but the information supplied is, so far as it goes, excellent and accurate, and furnishes a marked contrast to the paste-and-scissors compilations sometimes palmed off upon a too confiding public. The practical details supply just what is wanted, and what we may add is often difficult to find. The selections of shrubs intended for different purposes are judicious, and the plants are properly named. The illustrations, though rather coarsely executed, do really illustrate the text, and a table of contents and an index facilitate consultation. There are some omissions which we should be glad to see filled, such as Laurelia aromatica, Berberis Thunbergii, the golden-leaved Oak, Quercus Concordia, &c., and a fuller description of Vitis Coignetiæ and its allies is desirable. Picea is included in the index, but it is not to be found at the page indicated, but at p. 147. But it is clear that compression rather than expansion was necessary, and the wonder is that the author has been enabled to pack so much into 150 pages. The work is so good that we should like to see a fuller treatise on the subject from his pen.

TREES AND SHRUBS.

THE MAGNOLIAS.

MAGNOLIAS succeed best in warm positions and in a moderately rich soil, which should be of a free, open texture, and great care should be taken in transplanting them that no fibrous roots be broken off, as the shrubs are somewhat impatient of root disturbance; judgment should also be exercised with a newly-planted bed as regards protection from frost. This is easily afforded by covering the top with a good coating of stable-manure, and by wrapping the trunks round with a mat, transplanting being done in October. Magnolia glauca and some others grow best in a peat soil in a moist situation. They are generally increased by layers put down in the spring or autumn or by seeds. When the layers are first taken off they should be potted in a mixture of loam and peat placed in a close frame till they have made fresh roots; none of the leaves should be taken off or their tops shortened, as they will not succeed so well, for the more branches and leaves are on them the sooner they will strike roots. Some cultivators cut off many of the leaves and shoots from the layers when they are first taken off, thinking that the roots will not have so much to nourish, which is the very reason they often lose great parts of their crops. Layers of any kind of shrub when first taken off should not have a single leaf removed until they have made fresh root. Even if their tops flag ever so much, so long as there is life the leaves will draw up the sap and help the plant to root afresh. The Chinese kinds are often inarched or budded on M. obovata, and take readily. Veneering and side-cleft grafting are also practised in July and August, the stocks operated upon being placed in a close frame until union is effected.

The greenhouse kinds thrive best in a mixture of peat and loam, and are also increased on M. obovata, one of the readiest-growing kinds. M. fuscata or Michelia fuscata, and any of the weak species, may be increased with facility from cuttings taken off as soon as ripe and planted in a pot of sand under a glass. The seeds of the North American species are received annually from that country when ripe, and should be sown as soon as possible after their arrival, and kept moist until they germinate in pots of light, rich earth, covering them half an inch deep. These may be placed either in a hotbed or in a warm, sheltered situation, or they may be sown in the open ground, and when the plants are of sufficient size they should be planted out singly into pots and sheltered till they have taken fresh roots, and should be protected from the frost by a frame for two or three successive winters, giving them the benefit of the open-air in mild weather. *C. S.*

INTERGRAFTING BRANCHES.

WHILE living at Watsonville, California, U.S.A., I noticed a large orchard of Apple-trees, all of which were grafted as seen in the sketch (fig. 105). I thought it somewhat of a novelty, so made it my business to call on Mr. M. Tuttle, the owner of the orchard, and chatted with him about his Apple-trees. He said it occurred to him that by grafting from one main branch to another it would save placing "props" to the trees, allow more room in fruit-gathering time, and prevent the branches from breaking owing to the weight of the crop. The twigs were bent toward each other, and twisted round. When I saw them the grafts were from 1½ to 2 inches in thickness, the trees having been planted about twelve years. Another thing I noticed was that all the best fruit grows in the orchards where the ground is ploughed and harrowed or, as they term it, cultivated. The trees are planted in straight rows seen from whichever way they are looked at, the rows being 25 to 30 feet apart, according to the variety of Apple-tree planted. *G. Osborn, Dunstable.*

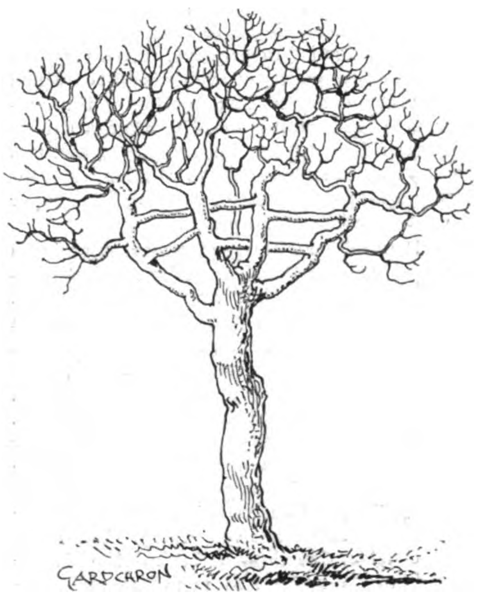


FIG. 105.—MUTUAL SUPPORT AFFORDED BY INTER-GRAFTING BRANCHES.

KEW NOTES.

LISSOCHILUS MAHONI, *Rolfe*.—This is a very handsome and noble new species now flowering in the Victoria-house. Mr. Rolfe has named it in honour of M. J. Mahon, of the Imperial Institute, and late Curator of the Botanical Gardens, Entebbe, Uganda. Mr. Mahon sent the tuberous roots to Kew from Uganda in the latter half of the year 1902; since which time they have been grown under stove conditions, being potted in a compost of three-parts fibrous yellow loam and one-part of leaf-soil, with a considerable addition of silver-sand. It has grown vigorously under this treatment, and now fully occupies a 10-inch pot with its fleshy roots. L. Mahoni is of the same giant proportions as L. giganteus, which was flowered by Sir Trevor Lawrence in May, 1888, and was figured in the *Gardeners' Chronicle* for May 19 of that year. The species now flowering has very stout, Phaius-like growth, the linear-lanceolate leaves measuring 6 feet in length and 3 to 4 inches in breadth. The stout, erect peduncle (which has been about six weeks developing) is 8 feet in height, and will probably grow another foot by the time it is fully developed. At the present time there are fourteen fully-expanded flowers, and about an equal number of buds. The sepals are partly reflexed, about 1 inch long by ½ inch broad, light brown in colour marked with darker brown. The petals are 1½ inch long, and almost as broad, being curved slightly towards the lip; they are a beautiful shade of pink slightly tinged with violet colour, shading to nearly white at the base. The labellum is very large and handsome, the side lobes are deep green, with broad dark-brown markings, and the apex of the lip of bright violet colour. Running for two-thirds the length of the labellum is a dense straw-coloured crest, which is a very prominent and distinctive feature. When the petals are flattened the flowers have a a diameter of fully 3 inches. *W. H.*

FLORISTS' FLOWERS.

SOME NEW GREEN-EDGED SHOW AURICULAS.

NOTEWORTHY additions are being made to the green-edged section of the Show Auricula. The florist places this section at the head of the group. The edge is a very highly-prized "property," in the Auricula, and years of patient toil must have been spent in developing it. The pure, rich green on the edge of a finely-formed, stout and flat pip is considered to be one of rare beauty and value; next to this comes the zone of black body colour, which in a perfect flower should not strike through to the edge of the segments. Enclosed in this the paste, which is a circle of brilliant white meal, smooth, dense, and circular in a good flower; and then the golden tube, waxy in substance and circular in outline when at its best; and round the mouth the anthers, not too prominent, dusted with gold, and hiding from view the stigma, which is at a lower level in the tube. A perfect green-edged Auricula is still an ideal flower. Approximate perfection is of very slow development, but progress is being made, and that is matter for congratulation.

The veteran Ben Simonite of Sheffield is now the principal raiser and distributor of new varieties. He is this season offering two new green-edged Auriculas, having obtained sufficient stock. They are Henry Wilson, paste dense, sparkling and smooth, body colour black, edge pure green, tube golden, and pip of perfect form. It was shown in such fine character at the Midland Auricula show at Birmingham in 1903 that it was selected as the premier flower. From appearance it is a vigorous grower. Dr. Hardy has also been seen on the exhibition table, and it has on a few occasions been selected as the premier bloom at the shows held in London and Manchester. In its best character it worthily commemorates that old-time Lancashire florist after whom it was named. It has a bright green edge, golden tube, solid paste, black body colour, and fine form. It should be remembered that a new Auricula may be exhibited by the raiser half-dozen or more years before it can be put into commerce, so slowly do some yield increase in the form of offsets.

Gladiator is another of the veteran's seedlings he describes it as a flower of the finest quality, with pure green edge, black body colour, clear solid paste, golden tube, and the pip of fine shape. Shirley Hibberd, also one of Simonite's raising, appears to improve in cultivation, and Mr. James Douglas describes it as "a very fine Auricula—I think even superior to Abbé Liszt.; it has a beautiful gold tube, white paste, black body colour, and a fine green edge." It has been shown in good character during the past two or three years, and was distributed five years ago; it has been selected as premier, and awarded a First-class Certificate of Merit. Mr. Simonite is also distributing Diomed, which he describes favourably; but the name of the raiser is not given; it is probably one of Mr. Horner's raising. A new green-edged Auricula which is becoming popular, and which has been well illustrated at Auricula shows, is Abraham Barker, raised, I believe, and distributed by Mr. Thomas Lord, of Todmorden; the edge is of a distinct olive-green, the various parts well proportioned, a vigorous grower, and an extremely useful variety.

I have seen in Mr. James Douglas's collection a variety raised by Mr. B. Simonite, bearing the name of Chloe, though I do not think it has been formally put into commerce. It produces refined pips, the edge of an unusually lovely green, with a zone of black body colour; but I fancy it is lacking in constitutional vigour. Mr. Douglas has a new variety named Greenfinch, a bright and attractive flower of good properties, but the stock appears to be limited.

Of the standard sorts, some of which still command a high price, there are Abbé Liszt (Douglas), which is generally shown in excellent character; James Hannaford (Simonite), which, when first shown promised well, but has not maintained its early character, and Mrs. Henwood, an excellent variety in addition to being a good grower. Page's Champion, Leigh's Colonel Taylor, and Booth's Freedom, which fifty years ago were the "cracks" of the green-edged section, are now rarely met with. The red F. D. Horner, Snitherfield Green, Talisman, John Garratt, &c., represent a group of cheaper sorts, with which the new beginner in Auricula culture may commence operations, and test his ability to grow the more expensive sorts.

For not one of the foregoing can perfection be claimed, but they are as so many stepping-stones lying in the path of progress, and an examination of their striking pips, when seen in their best character, seems to impart strength to the confident belief that they are but as prophecies of higher forms. *R. D.*

THE APIARY.

MAKING NOTE OF FAILURES.

We may often learn more by taking note of failures than from recording successes. During the present year keep a strict account of all lack of success, and next year will be one of the most successful you have ever known, all other things being equal.

The Skep Beekeepers.

Most of us commenced by keeping bees in skeps. I well remember how much I learned of bees and their ways by closely observing them going in and out of that first skep. To reap the full reward of bee-keeping bar frame hives must replace the skeps, but how to get the bees from one to the other is the difficulty.

Driving Bees.

The best way is to drive the bees from the skep in the following manner. Give the bees to be transferred a puff of smoke through the entrance, and wait two or three minutes. This allows them every opportunity to gorge themselves with honey. Having allowed the time to elapse, give them another puff, overturn the stock, and puff again. Place the overturned skep in a bucket, and put an empty skep on the stock, so that the sides coincide. Drum the sides of the hive containing the stock gently, and the bees will soon be in the top skep. Take the combs containing brood and tie them in the frames with two pieces of tape, taking care that the combs touch the tops of the frames. Fit the remaining frames with full sheets of brood foundation (sheets eight to the pound). Shake the bees on the frames, drive them down with smoke, put on the quilt and feeder, wrap up warmly, and success is almost certain. Some people simply place the stock above frames, and allow the bees to transfer themselves; but the process is a slow one, and far from economical. *Chloris.*

BAY TREES.

By no means the least remarkable feature of Messrs. Sanders' Nursery at Bruges, is the collection of Bay trees (Laurus nobilis). There are tens of thousands of them, ranging from plants a few inches in height to stately bushes 12 feet and upwards, ranged avenue-wise on either side of one of the walks. In so vast a collection variations in form are noticeable. The one we illustrate (fig. 106) shows a tree of peculiarly marked conical form, doubtless aided by a little timely pinching.

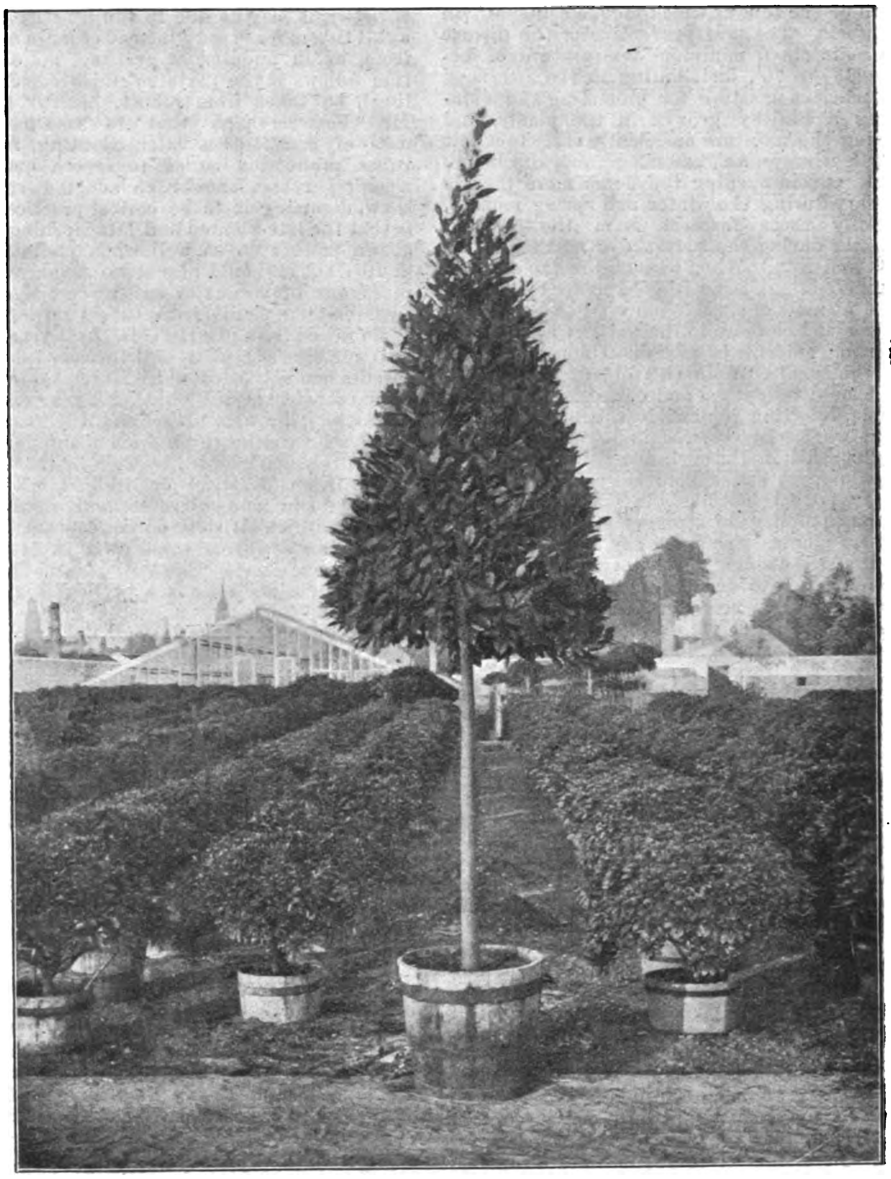


Fig. 106.—Standard pyramidal bay and azaleas in Messrs. Sanders' nursery at Bruges.

Some of the trees are veterans, sending up in abundance suckers, by means of which they can be propagated; and, as we have said, there is a perfect army of juveniles destined to succeed their forbears. Handsome and fragrant as is the Bay, there are other shrubs which might be used for the sake of variety. In particular we would mention Laurelia aromatica, to which we refer on p. 252. It is true that we do not know at present how far that shrub is amenable to propagation, but every effort should be made to multiply so desirable a hardy shrub when it would prove a formidable rival to the Bay.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

THE CUCUMBER "SPOT" DISEASE.—On p. 219 in the issue for April 8, Mr. Thomas says: "The most likely cause, in Mr. Ward's opinion, for the attack of the disease is to be found in the weak and worn-out condition of the plants after a period of heavy and continuous fruiting, inviting attack in their more or less enfeebled state." By reference to my letter on p. 150, and to that on p. 188, he will find that he has misrepresented me, unwittingly, no doubt, inasmuch as I did not express the opinion which he ascribes to me. I simply attributed the cause of "spot" in Cucumber leaves to unfavourable external as well as internal conditions occurring after the fire-heat has been dispensed with, merely mentioning that the then nearly-exhausted plants would be more susceptible to the disease than young vigorous plants just coming into bearing would be. Mr. Thomas says that as far as practical experience goes he is in agreement with me that the composition and condition of the soil under expert management have nothing to do with the appearance of the "spot," adding, "but this is not to say that science, after all, may not prove by demonstration that a certain chemical treatment of the soil may effect a prevention of the disease." We might as well infer that a chemical treatment of the soil in which Vines, Peach-trees, and Roses are growing will effectually prevent mildew appearing on the foliage growing under unfavourable atmospheric conditions. The cause of "spot" appearing on Cucumber-leaves, and mildew on the foliage of Vines, Roses, &c., is to be attributed to the atmospheric conditions of the houses in which the respective plants are growing [which favour the development of the fungus]. A low temperature with a humid atmosphere will cause mildew to appear on the foliage of Roses and Vines, and if the same conditions are present in Cucumber-houses they will also induce [the growth of the fungus which produces] "spot" in Cucumbers. The best preventive of the disease is to maintain a minimum temperature of between 65° to 70°, distributing in the afternoon only sufficient moisture for promoting and maintaining a healthy growth in the plants, and applying the moisture sufficiently early to admit of the pathways, &c., becoming fairly dry before sunset. Avoid opening the doors more than is necessary during the winter and spring months, especially those farthest from the heating apparatus during the presence of north and east winds and rain. When wheeling in the compost for top-dressing, it is a good plan to hang a couple of mats or similar material on either side the door and close up to the wall, as a means of preventing currents of cold air coming in contact with the plants. With this object in view the door should be opened and closed as quickly as possible, selecting if possible a calm, warm day for the work. In short, while a good brisk heat is maintained in the entire length of the pipes, and a buoyant atmosphere is secured day and night, "spot" is not likely to put in an appearance on the foliage of strong, free-growing, well-cared-for plants. Some will say, "Why dispense with fire-heat at all?" The answer to this question is obviously to lessen the cost of production in, say, midsummer, when climatic conditions appear to be favourable to this being reasonably done with safety. As stated in my two previous letters, it is at this critical point that the danger from "spot" is most to be feared and guarded against, and when, in my opinion, vaporising the houses with sulphur with Campbell's Vaporising Machines will prove effective as a preventive if not a cure for "spot." May I here ask if Mr. Thomas has ever had any personal experience of the vaporiser indicated? If not, I feel sure that the result of a trial of one would cause him to modify his views as regards the efficacy of the sulphur vapour so applied, and at the same time to relegate to thin air the drawbacks which he associates with the application of the sulphur vapour as a preventive, if not a cure, for "spot" on Cucumber leaves. The Swanley College prescription (see p. 201) I am inclined to think favourably of. Whatever good may result from the application of this mixture to the pathways must be attributed to the fact that the carbolic acid vapour having been diffused in the atmosphere of the house is inhaled by the plants through the leaves. I am quite convinced that whatever cure or preventive may be found for "spot" in Cucumber leaves it must be applied atmospherically, and certainly not to the soil in which the plants are growing. In conclusion, I should like to know the opinion of any mycologist and plant disease specialist on this very important subject of "spot" on Cucumber leaves, and so learn what reasonable ground there is or can be for supposing that the chemical treatment of a perfectly suitable and root-inviting compost may, as suggested by Mr. Thomas, effect a prevention of the disease—"spot." *H. W. Ward, Rayleigh.*

DO POTATOS DETERIORATE?—It is obvious that the question as to Potato deterioration can only be settled by practical experiment and observation, and not by mere discussion. Could the matter be determined by experience, extending over a series of years, on a plot set apart for such work at Wisley, and placed under the control of a special committee, useful results might eventually be obtained. Whilst, on the one hand, it is asserted that varieties grown on the same soil for several years in succession soon wear out, there are, on the other hand, cases like that furnished by the veteran raiser Robert Fenn, who has not only kept tight hold of the stocks he raised some forty years ago, but for fully thirty years has been growing them in the same garden ground, and still finds the varieties as good as ever they were. There seems to be no reason why the Wisley soil, once it is deeply worked and rendered suitable, should not do well for Potatos, and enable real tests of constitution to be conducted. When Professor Perceval referred to the unsatisfactory results which followed from attempting to propagate old trees by means of cuttings taken from the weak spray of old branches, he did but accentuate the argument that if deterioration does occur in Potato varieties, it may be due to the practice of using small tubers for "seed" instead of large ones. In trees, as in budding or grafting, no deterioration follows if the parts so employed, or if cuttings, be taken from robust, healthy growths. Mr. Foster's plea that to retain robustness of constitution later planting for seed-tuber production so as to secure quite late-ripening tubers should be adopted serves to show, assuming it to be correct practice, why it is that the late-planted and late-ripening Scotch-grown potatos do so well when planted in the South; but it should also serve as an argument in favour of sprout or cutting propagation, as such created plants form tubers later than do those raised from planted sets. Last year Messrs. Sutton & Son's breadth of Discovery raised from sprouts was not lifted until November, and such tubers should naturally give this year exceptionally strong growth. Discovery tubers seem to be of all varieties, even from planted sets, the latest to push growth, beating in that respect tubers from Scotland or Ireland. Evidently Potatos do in many cases seem to need certain elements which all soils do not contain, hence it is that we see from some soils tubers of the greatest excellence, whilst the same varieties grown on other soils are watery, soapy, and worthless. Such soils may soon induce deterioration; but if the essential ingredients the Potato needs were supplied, tubers of great excellence and robust constitution might well result. *A. Dean.*

LAURELIA AROMATICA. — Has anyone succeeded in propagating this delightfully-scented shrub, which was noticed on p. 230? Mr. Burbidge kindly gave me a leaf of it in August, 1901, and it still smells sweetly, after nearly four years' drying. It is, I believe, hardy in Co. Wicklow. Perhaps Mr. Moore's plant will produce seed, as it appears to have flowered; its scent is one of the sweetest I have yet known, and I have been looking for plants ever since I first saw the plant. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

FRENCH TIMBER CROPS.—I have read with interest Dr. Henry's practical address at the Horticultural Club published on p. 221, but I would like to ask if the statement that French foresters leave only about 200 trees to the acre, finally, is not an error? In Bagneris's *Elements of Sylviculture*, p. 40, he says, "the forest can never be too full"; and a reference to his definitions of "thicket," "low pole," "high pole," and "old high forest" will show what he means by density. Speaking of high Oak forest, p. 67, he says the Oak should never be grown by itself, and in giving 200 to 250 Oak trees to the acre, "well distributed," he is speaking of a forest containing Beech and Hornbeam in addition. All Beech trees, he says, that immediately overtop the Oak must be got rid of, and Beech that are overtopped by the Oak must be preserved. The latter, it is added, must be commenced early, because if any length of time elapses after the pole stage is reached the Beech will die. Two hundred trees to the acre means nearly 15 feet apart, which is incompatible with Bagneris's degree of density, and more than the Oak needs. I believe Bagneris to be mistaken, however, about the Oak smothering the Beech, if that is what he means. The Beech kills every light-demanding species speedily, but in the thickest woods it itself survives. In almost every old wood in England Beech trees, affording quite as good examples of shade-enduring power as the Yunnan Ficus mentioned by Dr. Henry, may be found, not only with tier above tier of leafy branches, but where the Beech is also hemmed in by other trees, no light reaching the lower branches of the Beech except what filters through the thick overhead canopy. From what I have seen and read, I do not think French forestry is as good as the German. *J. Simpson.*

—— In reply to Mr. Simpson's question as to the number of Oak trees to the acre in a good French forest, when the timber is mature, I may quote official figures of one section of the Forest of Bercé, where the trees were 192 years old. This plot, twenty-one hectares, i.e., fifty-two acres, in extent, contained, according to a careful inventory:—

	Cubic Feet.
6,052 Oaks, measuring	565,000
530 Beeches ,, ...	17,000
6.582 Trees ,, ...	582,000

or 116 Oaks and 10 Beeches standing on each acre. The trees stood, therefore, 18½ feet apart. They averaged probably 120 feet in height, and there was complete canopy. I do not see how trees of that size could grow closer together. *Augustine Henry, Kew, April* 14, 1905.

POTATO-PLANTING.—The plan recommended by Mr. Parker on p. 201, of placing the tubers on end in trays, is an excellent one, and one of which I can speak from experience, gained while living at Goodwood Gardens with Mr. Parker. The trays can be stacked to almost any height until the tubers are ready to be taken to the ground for planting. A large number of Potatos can be prepared by three or four men on a wet day, thus saving valuable time in fine weather. The iron-shod dibber is known, I should think, in all country places, but although so well-known, it is not necessarily the best implement for use, for unless the shoe is round at the bottom there must be a cavity left under the Potato. A Potato tuber will start into quick growth if the soil is closely packed round it, which can be better accomplished by planting in a trench or by the use of a trowel. *John Beams, Kensington and Chelsea Schools, Banstead, Surrey.*

SEED-SOWING.—I was much interested in Mr. A. Hemsley's article on this subject, which appeared in the issue for April 8, and would like to support that gentleman's statements respecting the shading and covering of seed-pans. Writers and teachers have so persistently advised the practice of covering all seeds to the exclusion of light, that it has with many become as much a matter of course to do this as to provide crocks for drainage. Were growers to make the simple experiment of sowing two batches of any sample of seed, affording the same treatment to each, except that one shall be darkened and the other left exposed, I am confident it would soon be seen that the practice of darkening has nothing to recommend it. Dr. Pouchet, in his interesting book *The Universe*, says: "Following Ingenhouz and Sennebier, men have long taught that light was opposed to germination. This is an error, as Saussure noticed. Nevertheless, all the coloured rays of light are not favourable to it; the chemical and the calorific rays have an opposite action upon this phenomenon. The former, which are the blue and violet rays, clearly increase its activity; the latter, the red and yellow rays, are hurtful to it." It would appear from this that if, instead of totally excluding light, we could exclude the calorific rays only, germination would be appreciably hastened, and if that be the case, it would surely be good policy to place seeds of such plants as are difficult and slow of germination under handlights of blue-stained glass. The same authority (Pouchet) says, "If we pass an electric current beneath a sown surface, the seed develops much more quickly than in a part which has not been submitted to electricity." One wonders whether such treatment would tend to impair the constitution of the young seedlings; if not, it would probably be a useful method to adopt when handling seeds of such subjects as are stubborn and difficult to start. The greatest difficulty to contend with when seeds are fully exposed arises from the necessity for repeated watering. Not only is this a question of labour, but a necessity which involves dangers such as washing out, souring soil, rotting of seeds, and facilitating the growth of moss and fungus on the surface of the soil which so often spells disaster. If, however, care is taken in the choice of composts and of situation for the seeds, the necessity for constant watering may be minimised. Too high a temperature is frequently the primary cause of failure in raising seedlings. *Heather Bell.*

NURSERY NOTES.

DAFFODIL SEASON AT MESSRS. BARR'S SURBITON NURSERIES.

The popular names of some of our oldest and most beautiful flowers are almost as beautiful as the flowers themselves, and are oft-times singularly appropriate. How better could the Narcissus be described than as Lent Lilies, for at this season the Daffodils are at their best, at any rate, they are at Messrs. Barr & Sons' nursery at Ditton Hill, which it was our pleasure to visit a few days since? A sight such as is afforded at "Daffodil time" in these nurseries, where acres of these bulbous flowers are to be seen at a stretch, is one not readily forgotten.

This is not to be wondered at when it is remembered that the firm of Messrs. Barr & Sons is among those pioneers who have taken the Daffodil in hand, and have given to us so many of those beautiful and improved forms with which we are acquainted. The different types and species represented in the genus Narcissus have afforded material to the hybridist and cultivator in plenty. Here at Ditton may be seen the very "acme" of all that is best and novel among these popular flowers. The work of improvement still goes on, evidenced by the many fine seedlings yet unnamed brought to our notice, and by the order overheard given to the hybridist to take advantage of the morning to pollinate.

As we enter the Narcissus fields—for such they can only be described—we pass through a rockery which is full of patches of colour. A drapery of Aubrietia hangs in a mass over a huge boulder; another stone is hidden by tresses of Arabis albida; a patch of Muscari "Heavenly Blue" forms a delightful groundwork to a bed of that rare find of Mr. Peter Barr, Narcissus Queen of Spain; Cydonias in many shades of colour are worked in here and there, while Magnolia stellata is still in full beauty. But we pass on past breadths of coloured Primroses and Cowslips to our objective—the beds of Daffodils. To enumerate the whole of the varieties seen would necessitate the compilation of nothing short of a bulky catalogue, so we must be content to notice a few only of the choicer and newer varieties. The variety "Ariadne," that was recently given an Award of Merit by the Royal Horticultural Society, is of most perfect form, with a perianth of the purest white, surrounding a corona of pale sulphur-yellow, with a crenated margin. Admiral Togo, as its name would suggest, is new, and resembles a big Emperor. Its rival, Admiral Makaroff, is also of the trumpet section, with a glorious yellow corona. Beatrice, one of the Leedsii section, is an almost pure white flower, with perianth of the best form. James Bateman, a small Incomparabilis, carries a pure white perianth surrounding a yellow chalice. J. B. Camm deserves a word of notice; it is still one of the finest light-coloured trumpet Daffodils. Beauty is a large Incomparabilis, the corona being tipped with orange.

A bed of "Barrii conspicuus" in full beauty could not fail to attract attention, while near by were such fine things as Duchess of Westminster, Weardale Perfection, and White Lady. Willie Barr has a lovely perianth of the softest shade of yellow and fimbriated margins; near by is Madame de Graaff, hardly surpassed as a white trumpet Daffodil for its size, colour, and symmetry of form. Vesuvius, Mars, and Lucifer, all of the Incomparabilis type, differ principally in the degrees of colour in the corona. Sunset may be noted for its umbel of fragrant flowers, each crowned with an orange-red cup; as well as Mercedes, a new Burbidgei, which hangs its twisted perianth and bright red cup in quite a modest manner. Varieties still appeal to us, but limited space compels us to but mention such fine things as Rowena, Rev. D. R. Williamson, Salmonetta, Peter Barr, Peach (Leedsii), Mrs. Geo. Barr, Lobster, King Alfred, Hon. Mrs. Jocelyn (new), Loveliness, &c. Among the Poet's Narcissus, one of the finest varieties is Glory, having large snowy-white petals and an exquisite "eye."

The breadths apportioned to seedlings were well furnished, and many promising ~~things were~~ noticed. One labelled 115, a seedling bicolor, reminded us of a large J. M. B. Camm; another, 663, is a fine lemon-yellow-coloured bicolor; its neighbour, 664, carried a fine yellow trumpet, and was the result of a cross between Madame Plemp and Lord Roberts; No. 68 resembles Weardale Perfection, but with a lighter trumpet and a white perianth; Pharaoh is a bold flower with sturdy trumpet of rich sulphur-yellow; No. 660 is a fine white Ajax with curved petals and creamy perianth. The giant trumpet of Milky Way is of the palest yellow, while the flower is of excellent form; Mrs. Batteridge is new, with the trumpet almost white, spreading and crenated at the margin. Mrs. Henry Buckley, a new seedling of the Incomparabilis type, has a large, rich corona and a well-shaped flower; Blackwell, another Incomparabilis, although not new, is one of the best of this type, its beautiful chalice being stained with orange-scarlet; the flower stands well above the foliage. A bed of Cleopatra (trumpet) was in full beauty, while in contrast was the dwarf-growing yet sturdy Phil May, whose trumpet is of large proportions. The list is incomplete, but we must pass on, and as we do so notice some of the other occupants of the nurseries, for—

> "Here Hyacinths in purple sweetness rise,
> And Tulips tinged with beauty's fairest dyes."

The Tulips are not quite forward enough to be seen at their best, although several beds of "English" Tulips are now in flower; while a collection of "the flaunting red" Duc van Thol was most conspicuous, although perhaps somewhat past their prime. Muscari "Heavenly Blue" was observable from almost any position in the nursery, broad patches of it having been planted in various parts of the grounds.

We also noticed some fine forms of coloured Primroses, Irises, Polyanthus, Myosotis, Ornithogalum, &c. The persistent character of this last-named was observable in the many "rogues" of this plant which appeared among the Daffodils, &c.

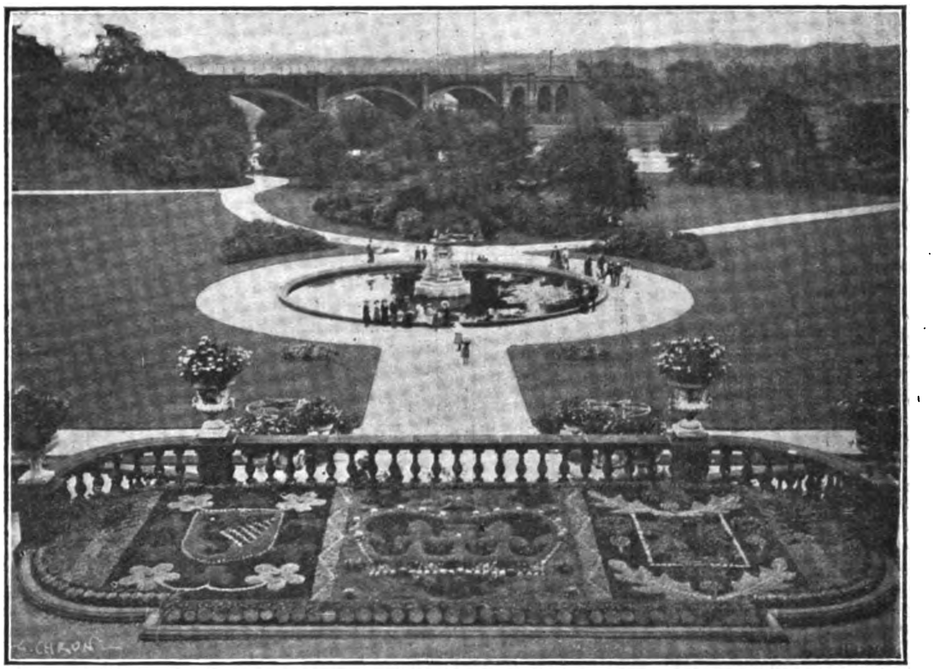


Fig. 107.—A novel carpet bed.

A NOVEL CARPET BED.

Our illustration (fig. 107) is that of a flower-bed, 30 feet long by 12 feet wide, in the Public Park at Preston, intended last season to represent the armorial devices of England, Ireland, Scotland, and Wales. The arrangement of the planting was as follows:—The symbol of England occupied the central portion. The crown was outlined with Echeveria secunda glauca, dotted with E. Peacockii and Pachyphytum bracteosum, with a line of E. Peacockii along the underside; above was Kleinia repens and Alternanthera magnifica. The feathers were represented by Pyrethrum Golden Ball, with Lobelia Newport Model for groundwork; above was Alternanthera magnifica and Lysimachia nummularia aurea, while the Maltese cross was planted with P. Golden Ball. The representations of Roses were formed with Alternanthera magnifica, and the Rose-leaves with a very compact-growing Sempervivum. The groundwork of England was planted with Sedum glaucum dotted with Pachyphytum bracteosum.

Scotland is represented to the right, and in this symbol the central figure was planted with Alternanthera magnifica, with a groundwork of Lamium maculatum aureum, the four corners being planted with Iresine Lindeni with a line of Echeveria secunda glauca. The Thistle flowers were formed with Lobelia pumila compacta and Kleinia repens, while the leaves of the Thistles were formed with E secunda glauca and Antennaria tomentosa. Veronica repens was used as a groundwork for the whole.

To the left Ireland is represented by the "Harp," planted with Alternanthera magnifica, and having strings of blue Lobelia and Echeverias, and a groundwork of Pyrethrum Golden Ball with a line of Kleinia repens. The Shamrock flowers were formed with E. secunda glauca and Antennaria tomentosa, while the leaves were formed with the same Sempervivum as were the Rose leaves in England's portion. The groundwork here was planted with Sedum.

To the extreme right and left of the bed Wales is represented by the Leek. This was designed with Antennaria tomentosa and Draba aizoides, with a groundwork of Mesembryanthemum cordifolium variegatum. Unfortunately the designer had not sufficient space to represent Wales so fully as he wished.

The dividing lines of the symbols were planted with Echeveria and Mesembryanthemum. Along the front of the bed was a row of Sempervivum tabulæforme, to the right and left E. metallica glauca, with a row of Lobelia pumila compacta running entirely round the bed. The bed was greatly admired by all those who saw it. *C. Ings.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

APRIL 11.—*Present:* Dr. M. T. Masters, F.R.S. (in the Chair); Dr. M. C. Cooke, Rev. W. Wilks, Messrs. Saunders, Shea, Odell, Baker, A. Sutton, Worsdell, Massee, Douglas, and Chittenden (Hon. Sec.).

Deterioration of Vegetatively Reproduced Varieties.—Letters upon this subject from several gentlemen were read (see p. 287), mostly pointing to the conclusion that varieties do deteriorate. Mr. SUTTON said that in his experience deterioration of Potatos does take place sooner or later, the only well-marked exception to this rule being the Early Ashleaf, which is now apparently as vigorous as it has ever been. Potatos raised from seed show marked variation on every point, some deteriorating within five or six years, others not until the passage of a much longer period. [A further communication from Mr. Sutton will appear in our next issue. ED.] Mr. LINDSAY, of Murrayfield, Midlothian, sent tubers of Maincrop Potatos and of Solanum etuberosum raised from tubers planted out in ordinary, unmanured, garden soil in 1899, the plants having remained in the open ground unprotected and undisturbed, except for moving once in September, 1902. The plants had not suffered from any kind of disease nor from frost, and do not appear to have deteriorated in any way. The question of the influence of the moister Scotch climate on the Potato was raised, and the effect of flower and seed production on the vigour of the tubers produced was discussed.

Rust on Rose.—Dr. COOKE reported as follows on this well-known trouble :—"This rust was known half a century ago as Uredo pinguis, but afterwards as Coleosporium pingue, and was then considered to be an independent fungus. In more recent times it has been found that most of these parasites exist under three forms, or pass through three stages, viz.—(1) Æcidium, (2) Uredo, (3) Teleutospore. In the present instance (1) the æcidium form is Coleosporium pingue, (2) the uredo form is Lecythea rosæ, and (3) the teleutospore form Phragmidium subcorticatum. The Coleosporium is the first form to appear in the spring, on the twigs and peduncles chiefly; near midsummer the uredo spores appear on the leaves; in autumn the teleutospores appear as black tufts on the under surface of the leaves. As an endophyte this pervades the tissue of the entire plant, and is very difficult to combat. It is recommended that all the affected spots be cut off as soon as they are recognised, and burnt, so as to prevent the dispersal of the spores. Before the buds expand in the spring, bushes that have been attacked the previous year should be well syringed with Bordeaux-mixture. Leaves should be watched carefully through the summer, and when the uredo appears thereon, or later the teleutospores, the leaves should be picked off and burned, because when the teleutospores germinate they are able to infect healthy Roses, and produce the Coleosporium in the following spring. Occasional syringing with Bordeaux-mixture checks both the first and second stages." (See *Gardeners' Chronicle*, 1886, p. 76.)

Diseased Arums.—Mr. SAUNDERS reported that he was able to find only a few springtails and two very minute worms in the tubers, and he thought that neither was sufficient to cause the decay which had gone on to the depth of ¼ inch at the base of the tuber. The two smaller plants had healthy tubers so far as could be seen. Mr. ODELL had also examined them and reported: "The decay at the base of the tubers was not unlike in appearance the yellow root-rot of the Hyacinth. I could not find anything to account for decay beyond a few springtails, and these I think would not cause so much injury. In the decayed portion there was evidence of bacteria due rather to the decayed matter than contributing to the cause of the decay, as I could not trace any bacteria high up in the tuber. I have isolated the plant, and shall attempt to grow it on for farther examination, when I will submit it to the Committee. From the growers' remarks drastic measures have been taken to remedy the trouble. I would suggest destroying the stock, taking care that the soil in which the plants have been grown be burnt or treated with lime, and that the pots be washed with a strong carbolic solution."

Vine Leaves Spotted.—Leaves of Vine were received from Roehampton having a large number of small blackish spots upon them. It was thought that the trouble was due to the lack of sufficient ventilation. Dr. COOKE took some to examine farther.

Horse-Chestnut Twigs Damaged.—Twigs from which the bark had been removed on one side near the beginning of last season's growth curiously twisted and bent were received from Wymondham. Mr. SAUNDERS undertook to report upon them at the next meeting.

Fasciation.—Mr. CHITTENDEN showed an example of this in the terminal flower of the Hyacinth, and Mr. WORSDELL showed fasciated aërial roots of Ivy reaching half an inch in breadth in some cases. He considered the fasciation was brought about by a dichotomy of the growing point, and it was suggested that this might be due to injury by insects, &c. Dr. MASTERS mentioned that a similar thing was sometimes seen in Orchid roots and in roots of some of the Cactaceæ.

Narcissus Fly.—Mr. CHITTENDEN showed specimens of this fly, Merodon, which he had bred, showing considerable variation in colour from a foxy-red throughout to the commoner form with blackish bands.

Witch's Broom on Hornbeam.—Mr. ODELL showed specimens of this similar in appearance to those commonly seen on Birch, caused by a mite (Eriophyes).

Geographical Forms of Narcissus Bulbocodium.—Miss WILLMOTT, V.M.H., exhibited a collection of N. Bulbocodium from all the known habitats of that species, showing a very large amount of variation both in foliage and flower.

Malformed Iris.—Mr. WORSLEY showed flowers of Iris bulbosa in which the stamens were branched, so that there were six or more anthers in each flower. Dr. MASTERS undertook to examine them.

DEVON DAFFODIL AND SPRING FLOWER.

APRIL 11.—This Society opened its second annual exhibition at the Guildhall, Plymouth, on the above date. The show was a great advance upon that of the preceding year, the endeavours of the committee having met such success in the county that about 40,000 cut Narcissi were staged in the hall. In the open classes many excellent stands were contributed by Cornish growers, Mr. J. C. WILLIAMS's collection of seedlings not in commerce attracting universal admiration, while in the section restricted to the county of Devon, competition in the classes for cut Daffodils was particularly keen, thirteen exhibitors entering for the premier class for fifteen distinct varieties, and many of the other classes attracting ten or more entries. The show of hard-wooded flowering shrubs grown in the open was unique, for probably such an assortment has never before been seen in England early in April as that contained in the eight stands of twenty varieties that competed for the Silver Cup. The most striking specimen in all the collections was Correa cardinalis, in splendid flower in the 1st prize stand of the Earl of MOUNT-EDGCUMBE; while in Rev. A. T. BOSCAWEN'S 2nd prize stand were Boronia megastigma, Diosma gracilis, Polygala grandis, Clianthus puniceus albus, and a large flower-panicle of Brachyglottis repanda; and in the equal 3rd-prize stands of Sir A. PENDARVES VIVIAN and Mrs. CORYTON, of Pentillie Castle, were Embothrium coccineum and Neviusia alabamensis, rarely seen nowadays. The regulation in this class that none of the flower-sprays should exceed 2 feet in length was not strictly adhered to in all cases, and this caused loss of points to some exhibitors and undoubtedly affected the awards.

Rev. A. T. BOSCAWEN'S 1st prize stand for twelve distinct varieties of hardy spring flowers was particularly good, containing Antholyza coccinea, Myosotidium nobile, Fritillaria reticulata alba, F. imperialis, with immense flowers; Echium callithyrsum, and Erythronium Johnstoni, with five flowers on a stem and 18 inches in height. Pot plants were well shown—Cinerarias, zonal Pelargoniums, Freesias, Lilies of the Valley, Cyclamen, Hyacinths, Tulips, Daffodils, &c., being of high merit; while six wonderful plants of Mignonette, exhibited by Mrs. BAINBRIDGE, obtained an Award of Merit. Violets were poor owing to the lateness of the show, but Primroses, Polyanthi, and Auriculas were good.

Of nurserymen, Messrs. R. VEITCH & SONS, Exeter, who were awarded the Society's Silver-gilt Medal, had a fine collection of hardy flowering shrubs and other plants, comprising Lilacs, Azaleas, Rhododendrons, Grevillea sulphurea, Diosma linariifolia, Magnolia fuscata, and many other Magnolias, Acacias, Ericas, rock plants, including Androsace carnea, A. sempervivoides, A. arachnoidea, Saxifraga Boydii, S. Guildford Seedling, S. Griesebachii, S. Rhei superba, and Primula kewensis ×. The DEVON ROSERY, Torquay, staged a large collection of pot Roses in full flower, Carnations, and other flowers, and received a Silver Medal. Messrs. T. CHALICE & SON, Plympton, had a pretty stand with tall specimens of Cytisus purpureus pendulus, Andromedas, Magnolias, Rehmannia angulata, Cotoneaster angustifolia and Jasminum primulinum (Silver Medal).

Messrs. BARR & SONS staged a large collection of Daffodils, for which they were awarded a Silver Medal; and Messrs. SAUNDERS & BISS, horticultural builders, Exeter, had numerous photographs and specimens of their work.

Among the prizes awarded mention may be made of the following :—

Collection of forty variety of Daffodils: 1st prize, Rev. A. T. BOSCAWEN, whose stand contained a fine selection of highly-coloured flowers, amongst which the glowing-cupped Will Scarlet appeared.

Twenty varieties: 1st prize, Mr. E. H. WILLIAMS.

Twelve varieties: equal, 1st prize, Hon. JOHN BOSCAWEN and Mrs. W. TYACKE.

Group of Daffodil seedlings not in commerce: 1st prize, Mr. J. C. WILLIAMS.

Twelve Magni-coronati: 1st prize, Rev. A. T. BOSCAWEN.

Twelve Medio-coronati: 1st prize, Rev. A. T. BOSCAWEN.

Six blooms out-door Camellias: 1st prize. Mrs. J. WILLIAMS.

Finest Camellia bloom: 1st prize, Miss R. WILLIAMS.

Six bunches Anemone fulgens: 1st prize, Miss A. WILLIAMS.

Group of twenty varieties of hard-wooded flowering shrubs grown in the open: Silver Cup, the Earl of MOUNT-EDGCUMBE.

Fourteen classes for cut Narcissi were restricted to residents in the county of Devon.

MIDLAND AURICULA.

APRIL 18.—The sixth annual exhibition of this Society was held in conjunction with that of the Midland Daffodil Society, in the Edgbaston Botanical Gardens, Birmingham. A month ago it was thought that Auriculas would be early in flower, but the weather having been very variable since that time, and particularly cold a week ago, the prospects of having a good show were not good. In these circumstances the Secretary, Mr. Richard Holding, and his committee, may be congratulated upon the display that was made, which was slightly less in extent and in quality than that of last year.

Show Auriculas.—There were five exhibits in this class, and the one awarded 1st prize was shown by Mr. W. SMITH, Bishop's Stortford. The varieties were Cleopatra, Mrs. E. Osmond, and Mrs. Phillips (selfs), Rachael and a seedling (grey-edged), and Abbé Liszt (green-edged).

Mr. W. SMITH was also winner of 1st prize in the class for four plants, his varieties being Cleopatra and Mikado (selfs), Abbé Liszt (g.e.), and Geo. Rudd (g.e.).

The best exhibit of two plants came from Mr. J. W. BENTLEY, Middleton, who had Abraham Barker (g.e.), and Favourite, a self with white centre.

SINGLE PLANTS.

The best green-edged variety was Mrs. Henwood, from Mr. F. T. POULSON, Stafford: the best grey-edged variety, George Rudd, from Mr. W. SHIPMAN; the best white-edged variety, Acme, from Mr. J. COLLIER, Dinham; and the best self, Mrs. A. Potts, from Mr. C. J. FOX, Sparkhill.

Alpine Auriculas.—Mr. J. W. BENTLEY won 1st prize for six plants with the following varieties:—Godiva, Cynthia, Dr. Pegge, Aglaia, Rosie, and Pluto. 2nd, Mr. J. **Stokes**, Harborne.

Mr. J. W. **Bentley** had also the 1st prize for four plants, showing Bunthorne, Dr. Kenshaw, Blue Bell, and Jessie. 2nd, Mr. C. **Winn**, Selly Hill.

Mr. F. T. **Poulson** won 1st prize for two plants with the varieties Thetis and Joachim.

The best single plant of a gold-centred variety was one of the variety Richard Dean; and the best light-centre was Thetis, shown by Mr. F. **Poulson**, Stafford.

There were a few additional classes for Auriculas from local growers, two for gold-laced Polyanthus, and one for a group of alpine plants. The last-named prize was won by Messrs. **Pope & Sons**.

The premier alpine variety was Dr. Pegge, shown by Mr. J. W. **Bentley**; and the premier show variety, Acme, shown by Mr. J. **Collier**.

Certificates of Merit

were awarded to a new show variety named Mrs. E. Osmond (violet self), from Mr. W. **Smith**, Bishops Stortford, and to a new alpine variety "Dr. Pegge," raised by the exhibitor, Mr. J. W. **Bentley**.

The Misses **Hopkins**, Mere, Knutsford, Cheshire, exhibited mounds of Primroses, double Daisies, Fritillarias, &c.

MIDLAND DAFFODIL.

EXHIBITION AT BIRMINGHAM.

April 18, 19.—Birmingham is fast becoming known as the locality in which one of the finest exhibitions of Narcissus is held in this country. The Midland Daffodil Society, though scarcely seven years old, has not only succeeded in establishing fine exhibitions of the flower in the Botanical Gardens at Edgbaston, two miles or so out of Birmingham, but it brings together a very large number of Narcissus cultivators and admirers. On Tuesday last, as may be seen from the details given below, there were exhibitors from many of the English counties, and quite a considerable number from Ireland, whilst the visitors to the show included Mr. F. W. Burbidge, Dublin; the Rev. G. H. Engleheart, Hampshire; Miss Willmott, Essex, and other well-known Narcissus specialists.

A fortnight ago the indications of the season seemed to be that the Narcissus would flower very early, and the Midland Committee was induced to put the date of this show forward, it having been first arranged to hold it next week. The weather, however, since that time has been cold, and the plants have not flowered quite so early as was expected. But for this circumstance the display would have been rather more extensive, as Mr. Crossfield, Wrexham, and possibly other growers, were unable to exhibit, although Mr. Engleheart informed us that most of his flowers will be past by Tuesday in next week.

The show was a very good one, and quite early in the morning the scene in the large exhibition-house was one of activity and of attractiveness, as the exhibitors (ladies and gentlemen) were engaged in arranging their flowers.

Narcissus exhibitions serve to remind us of the great development that has taken place in this flower, and illustrates how the classification of the varieties into magni-coronati, medio-coronati, and parvi-coronati, is being undermined by numbers of new varieties that have arisen from crosses effected between parents of dissimilar types.

The chief workers at Birmingham, such as Mr. Robert Sydenham, Mr. Pope, and Mr. Herbert Smith, are to be congratulated upon the show of 1905, though it was rather less in extent than the previous one.

Competitive Classes.

The 1st prize in the largest open class, which was one for fifty varieties representing each of the three sections, was very well won by Messrs. **Pope & Sons**, Kings Norton. The flowers in this exhibit were superb, for such varieties as Kings Norton, Boniface, Olympus, Mrs. Galton, King Alfred, Mme. de Graaff (all of the Ajax type), and in other sections the brilliant Will Scarlet, Flamingo, Orangeman, Clarissa, Linda Pope, Firebrand, Marnia, C. J. Backhouse, Barbara Holmes, &c., were splendid examples of the development that has taken place in the flower.

One of the most important of the classes for amateurs was that for twenty-five varieties, selected to represent the three leading sections or types. There were three collections staged, and the 1st prize was won by H. B. **Young**, Esq., Metheringham, Lincoln. We cannot, of course, enumerate here the varieties shown, but may point to the Ajax varieties Glory of Leiden, Madame de Graaff, Captain Nelson, the Incomparabilis section represented by Lulworth, Gloria Mundi, and Vesuvius; the bicolor group including Mrs. J. B. M. Camm, the Barrii "conspicuus," and the Poeticus ornatus and Præcox grandiflorus as being among the best. The collection from W. A. **Watts**, Esq., Bronwylfa, St. Asaph, and another from Mr. J. **Mallender**, Hodsock Priory Gardens, Worksop, were awarded 2nd and 3rd prizes respectively.

A class for twelve varieties of Daffodil seedlings that have not been in commerce four years was won by Mr. **Berkeley**, Spetchley Park, Worcester, the varieties shown being as follows: Sihon, Great Warley, Noble, Chas. Wolley Dod (all Ajax varieties with yellow trumpet and white or tinted perianth), Robert Berkeley (sulphur coloured), Sir Francis Drake (yellow Ajax), Countess Grey, Incognita, Eleanor Berkeley, Earl Grey, and Poeticus aurora, and Rymster. The 2nd prize was obtained by P. D. **Williams**, Esq., Lanarth, Cornwall.

In a similar class for six varieties Messrs. **Pope & Sons** were awarded the 1st prize among several competitors.

Ajax or Trumpet Varieties.

The best dozen varieties of trumpet Daffodils were shown by Messrs. **Pope & Sons**, who won with Olympus, Glory of Leiden, Emperor, King's Norton, Waverin's Giant, Weardale Perfection, Madame de Graaff, Rembrandt, Mrs. Camm, Mrs. Batteridge, Glory of Noordwijk, and a seedling. Among three other exhibitors the Rev. G. F. **Eyre**, Far Forest Vicarage, Worcester, obtained the 2nd prize.

A similar class for six varieties was restricted to amateurs, and the most successful among these was Mr. J. **Mallender**, Worksop. The varieties Victoria, Madame Plemp, and Hodsock's Pride were included in this exhibit.

Incomparabilis Type.

In the class for twelve varieties of the section medio-coronati, the winner of the 1st prize was Mr. H. B. **Young**, whose collection was an admirable one, the varieties Gloria Mundi, Lucifer, and Crown Prince being very effective. The Rev. G. F. **Eyre** and Messrs. **Pope & Sons** were awarded 2nd and 3rd prize respectively, but we think the awards should in this case have been reversed.

In the class for six varieties (amateurs), **Arthur R. Goodwin**, Esq., The Elms, Kidderminster, obtained the 1st prize; and Mr. C. L. **Branson**, Coleshill Park Gardens, Coleshill, 3rd prize.

Though less conspicuous than the larger varieties, the flower of the parvi-coronati section are interesting and attractive. The 1st prize for six varieties was won by Messrs. **Pope & Sons**, the varieties being as follows—Southern Star, Oriflamme, Picotee, Bullfinch, Linda Pope, and C. J. Backhouse. 2nd, H. B. **Young**, Esq., Metheringham.

The best collection of six distinct varieties of true Poeticus was shown by H. B. **Young**, Esq. The varieties being Cassandra, ornatus, Homer, Almira, grandiflorus præcox, and grandiflorus.

Miscellaneous Classes.

H. B. **Young**, Esq., won 1st prize in a class in which the varieties with orange-coloured crowns or cups were selected in collections of twelves. These were effective and illustrated a characteristic of the newer varieties.

In Classes 14 and 15 there were collections of twelve and six varieties respectively, none of which cost more than ten shillings per dozen bulbs, and though the exhibits were not so good as many of the novelties, they were sufficient to inform the public of the fact that very good Narcissus can be obtained at reasonable prices. In Class 16 the same idea was carried a little further, as the varieties shown may be purchased at five shillings per dozen or less. Mr. **Sydenham** had a further class for bulbs purchased at three shillings per dozen.

There were several classes for Narcissus and Tulips shown growing in pots. Of these the polyanthus varieties were the much more effective, and the best were shown by R. **Chatwin Cartwright**, Esq., King's Norton, his collection embracing six varieties.

Tulips.

A class for flowers of nine distinct varieties of Tulips was won by Mr. A. E. **Campbell**, 11, Kempock Street, Gourock, with the following varieties:—Murillo, Pottebakker White, Rose Gris de lin, Prince of Austria, Proserpine, Pink Beauty, Mon Trésor, L'Unique, and Jost van Vondel. There were several good exhibits in this class.

Excellent Tulips were shown growing in pots, and the best were from the garden of J. A. **Kenrick**, Esq., Berrow Court, Edgbaston.

Narcissus Flowers Arranged for Decoration.

A number of exhibits were designed to afford illustrations of the appropriateness of Narcissus for use as cut flowers in decoration; of these the groups of flowers arranged in epergnes and other receptacles, each exhibit being disposed on a separate round-table covered with an ornamental cloth, were the most noteworthy. The 1st prize was awarded to Messrs. F. **Impey & Sons**, Midland Spring Gardens, Northfield, who employed a rustic flower-stand, silvered over, one variety of incomparabilis Narcissus only, and Asparagus Sprengeri. They were disposed over a cloth with green centre and gold-coloured band. The exhibit was very tastefully executed, and the only criticism that occurred to us was respecting the golden-yellow colour of the cloth, which should have been much paler, because the "cup" of the flowers was only lemon-coloured, and therefore suffered from comparison with the other. When it is stated that there were nine of those tables, and that they were disposed in a manner that the public could easily walk around each, it may be imagined that they contributed one of the prettiest features of the exhibition.

The Premier Flowers

of the different sections were as follows:—Of magni-coronati, King Alfred, shown by Messrs. **Barr & Sons**; of medio-coronati, White Queen, shown by Messrs. **Pope & Sons**; and of parvi-coronati, Beacon, shown by P. D. **Williams**, Esq.

Certificates and Awards of Merit

were recommended as follows:

Anemone "*King of Scarlets.*" — From Messrs. **Gilbert & Son** (Award of Merit).

Carnation "*The Belle,*" a tree variety with white flowers.—From Mr. A. F. **Dutton**, Bexley Heath, Kent (Award of Merit).

Narcissus Warleyensis.—A very fine yellow Ajax variety, with particularly large perianth and broad imbricating segments. From Miss **Willmott**, Great Warley (Award of Merit).

N. "*Lady of the Snows.*"—An Ajax variety with very long trumpet, perianth white, trumpet pale lemon coloured. Shown by Miss F. **Currey**, Lismore, Ireland (Award of Merit).

N. odorus rugulosus maximus.—A very large and handsome variety of the type. Shown by Messrs. **Barr & Sons** (First-class Certificate).

Non-Competitive Exhibits.

Messrs. **Barr & Sons**, King Street, Covent Garden, London, had a very extensive exhibit of choice and rare varieties of Narcissus. Conspicuous among the trumpet sorts were Lord Roberts, Monarch, King Alfred, C. H. Curtis (a yellow variety with a widely expanded trumpet), Big Ben, Weardale Perfection, Pyramus, &c. Of the Incomparabilis type, the varieties Maggie May, Dorothy York, Lulworth, Duchess of Westminster, Peach, &c., were all pretty; and there were numerous varieties of the Poeticus type, and sections nearly allied to it (Gold Medal).

Miss F. W. **Currey**, The Warren Gardens, Lismore, Ireland, had upwards of 100 vases containing most sections of Narcissus flowers. Some of the white trumpet varieties, like that of "Lady of the Snows," Madame de Graaff, White Knight, &c., were excellent; also the yellow trumpet King Alfred, and many varieties of the medio and parvi-coronati types (Silver-gilt Medal).

Messrs. **Reamsbottom's** "St. Brigid" Anemones from the Alderborough Nurseries, Geashill, King's County, Ireland, were as brilliant as ever. The shades of colour vary so much that in scarlet, pink, and blue, some are intensely bright, others subdued "delicate," and all are attractive. Particularly prominent was a large single flower with a band of white round the centre, and the remaining part of the segments vivid scarlet colour (Large Silver Medal).

From Messrs. **Hogg & Robertson's** Bulb Farm, Rush, Co. Dublin, came a collection of varieties of Narcissus and a few Tulips and Muscari, making together a brilliant exhibit (Large Silver Medal).

Another exhibit from Ireland was a collection of Narcissus from **Sir Josslyn Gore-Booth's** Bulb Farm, at Lissadell, Co. Sligo, the varieties in which appeared to us to represent chiefly the pale-coloured sections, white and lemon tinted yellow being the more frequent (Large Silver Medal).

Mr. S. **Mortimer**, Rowledge Nurseries, Farnham, Surrey, brought some abundantly flowered plants of a good strain of Polyanthus and Primrose (Bronze Medal).

Messrs. **Dicksons**, Chester, made a good display of Narcissus, in which the smaller trumpet and cup varieties were well represented (Small Silver Medal).

One of the best collections of Narcissus came from Messrs. J. R. **Pearson & Sons**, Chilwell Nurseries, Lowdham, Notts. The varieties had evidently been selected to represent the different sections, and from this point of view, and from that of good cultivation, the exhibit was excellent. The white trumpet variety Lowdham Beauty, the bicolor Lady Margaret Boscawen, and the yellow Glory of Leiden were conspicuous (Silver-gilt Medal).

Zonal Pelargoniums asserted their claim to effective colouring, even in the presence of the bright Anemones, for a collection of flowers from Mr. **Vincent Slade**, Staplegrove Nurseries, Taunton, Somerset, was specially well provided with varieties of scarlet, crimson, and rich pink colours (Large Silver Medal).

The hybrid and seedling Narcissi, staged by the Rev. G. H. **Engleheart**, Dinton, near Salisbury, was as usual the centre of great attraction, because all the flowers shown represented some new development or some fresh admixture of the characteristics formerly existing in separate individuals. The most wonderful were the varieties with crowns or very small cups but many of these were only designated by numbers. There were, however, "Acme" (a beautiful flower with white. handsome perianth and broad, flattened crown of deep colour), Delicata Waterwitch, &c., that were excellent (Silver-gilt Medal).

A very choice collection of seedling varieties was also shown by Mrs. BACKHOUSE, Sutton Court, Herefordshire, of which we may mention Dewdrop, Ardea, Czarina and Silver Mist (Large Silver Medal).

Another exhibit of seedling varieties was shown by Mr. J. MALLENDER, Worksop (Bronze Medal).

Messrs. GILBERT & SON, Anemone Nurseries, Dyke, Bourne, Lincolnshire, showed a collection of Anemones, in which their double-flowered variety King of Scarlets was well shown in considerable quantity. Another double-flowered variety is Queen of Roses (Large Silver Medal).

Messrs. FELTON & SONS, 7, 9, and 9, Hanover Square, London, W., showed magnificent Roses on long stems, and arranged in stands in which the merits of the flower were well displayed (Large Silver Medal).

Mr. W. A. WATTS, St. Asaph, North Wales, showed a collection of flowers of a good strain of coloured Primroses and Polyanthus (Bronze Medal).

LOCAL EXHIBITORS.

Messrs. BAKERS, Wolverhampton and Codsall, exhibited coloured Primroses and a very pretty little rockery planted with alpine plants in flower, among which the Aubrietias and Phloxes were exceedingly bright (Small Gold Medal).

Messrs. GUNN & SONS, Olton, near Birmingham, showed a bank of alpine and other hardy flowering plants in bloom, among which the gayest plants were several sorts of Auriculas, and other species of Primula (Large Silver Medal).

Messrs. HEWITT & CO., Solihull, near Birmingham, arranged a group of flowering greenhouse plants and forced shrubs, as Lilacs, Viburnum, &c.; also excellent flowers of such Carnations as Enchantress, Floriana, Prosperity, Queen Louise, &c. (Silver-gilt Medal).

Mr. ROBERT SYDENHAM, Tenby Street, Birmingham, exhibited Narcissus, Tulips, Lilium Harrisi, &c., growing in moss-fibre, which it was obvious is very suitable for these plants and exceedingly convenient in use (Large Silver Medal and Cultural Commendation).

Messrs. W. H. SIMPSON & SONS, Birmingham, exhibited a large collection of Narcissus as plants growing in pots, and cut flowers (Large Silver Medal).

THE DINNER.

In the evening, Mr. Robert Sydenham and Mr. John Pope entertained the principal exhibitors, judges, and a large number of visitors at dinner at the Old Royal Hotel. Mr. John Pope presided, and in addition to the speeches connected with the toast list, there were discussions on several subjects relating to the popularisation and cultivation of Daffodils.

ROYAL.

APRIL 6.—"Further Experiments and Histological Investigations on Intumescences, with some Observations on Nuclear Division in Pathological Tissues," by Miss Elizabeth Dale (communicated by Professor H. Marshall Ward, F.R.S. Read April 6, 1905).—This paper is the third of a series on intumescences. The first was mainly anatomical, the second chiefly experimental, and both related to one species, viz., Hibiscus vitifolius. The present paper contains (1) an account of further experiments with different plants, chiefly with Solanum tuberosum and Populus tremula. On the Potato plant intumescences were obtained experimentally in about twenty-four hours, either on a complete and uninjured plant, or on single leaves, or on small fragments of leaves. As in the case of Hibiscus vitifolius, the effect of varying degrees of temperature and illumination were investigated, and also the influence of nutritive solutions on floating leaves—the constant factor being a saturated atmosphere. A close connection was established on experimental, developmental, and cytological grounds between intumescences and wound-callus.

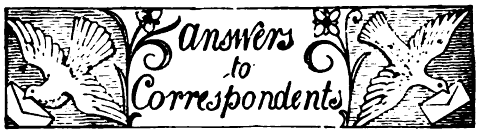
(2) Additional anatomical observations were made, and a classification of various types of intumescences, based on development and anatomical characters, has been drawn up. The cell contents of intumescences on various plants have been examined and compared with a view to discovering the osmotic substance which causes the initial accumulation of water in the formation of intumescences.

(3) In this connection experiments were made to determine whether the relative amounts of acids and salts, respectively, differed in plants with intumescences as compared with healthy individuals.

(4) These observations and experiments, taken in connection with various theoretical considerations, led to the conclusion that the actively osmotic substance is an acid, probably oxalic acid. They further, as do the experiments with fragments of leaves, show conclusively that the internal causes of the formation of intumescences are extremely local, and that root pressure is in no way concerned with the process.

The results obtained confirm and extend the conclusions reached by the earlier work with Hibiscus vitifolius, viz., that moist air, heat, light, and generally oxygen, are the necessary external factors. But the more recent investigations bring out the importance of certain internal or biological factors, namely, irritability and either active powers of assimilation or abundance of stored food material.

(5) Finally, the nuclear phenomena were investigated and compared, and were found to be in every respect identical in various intumescences and in wound-callus. Pathological tissues in certain plants and animals are also compared, and a strong resemblance is seen to exist between certain rapidly formed outgrowths in plants and animals, caused not by any parasitic organism, but simply by the influence of some stimulus, probably always external, acting upon a plant or animal in such a condition of irritability that it is able to respond. A similar resemblance occurs between regenerative wound tissues in certain plants and animals, the formation of which is in all cases accompanied exclusively by the more rapid form of nuclear division known as amitotic or direct.



Answers to Correspondents

ABIES NORDMANNIANA: *F. M.* The gall is due to a chermes. It is so destructive to this Fir as seriously to impair its use as a timber. Spraying with petroleum emulsion might be tried on small trees.

APPLYING INSECTICIDES: *L. F.* If the operation of spraying is an extensive one, you cannot do better than purchase one of the many spraying-machines that are on the market. For small operations a syringe works extremely well, but it requires some amount of practice and skill to adjust the proper pressure to the plunger, and one finger to the nozzle in such a manner that a suitable spray will result. It can, however, be done quite easily after a time.

BACK NUMBERS: *H. P.* A small advertisement would give you a better idea of the demand for them.

DOUBLE GRAFTING: *W. B.* This process, as its name implies, consists of placing a second graft upon one which has already been united to a stock. It is practised principally among Pear-trees, for it has been noticed that some varieties of this tree will not succeed upon the Quince stock, and this led to the introduction of intermediate stocks or double grafting. A variety of Pear which grows freely on the Quince is budded or grafted on that stock, and allowed to grow for at least two years; this is then cut back to within a few inches of the Quince stem, and the variety which is desired for fruiting is then grafted upon the intermediate stock.

FUNGOID DISEASES: *C. J. D.* The best plan is to send a sample to the Superintendent of the Royal Horticultural Society's Garden at Wisley, near Weybridge, for trial; or to one or more of the large growers for market.

GRAFTING CLEMATIS: *S. P.* We should say that the Clematis might possibly be grafted outside, but it would not be attended with sufficient success to make it worth while to adopt that method. The only really successful method is one adopted by nurserymen, viz., of working the soft shoots on roots of C. vitalba or allied species. Attempts with hard-wood have usually proved failures. Hence, as soft-wood is the only suitable wood, the necessity for indoor grafting. If you try the outdoor experiment, select showery weather for carrying out the operation, and use clay to cover the union.

MUSHROOMS DISEASED: *L. L., Grantham.* Your Mushrooms are affected by a disease which is, unfortunately, not uncommon to cultivated Mushrooms. It cannot be attributed to the "spawn," but is a mould, which is apparently to be traced to the manure. It has recently been called Mycogone perniciosa, which is undoubtedly another name for Mycogone alba. There is no remedy, when it once attacks a bed, but to clear it all out and thoroughly disinfect the house. *M. C. C.*

NAMES OF FRUITS: *C. E. D.* 1, Ross Nonpareil; 2, Syke House Russet.—*W. H. B.* 1, Gravenstein; 2, not recognised, send earlier in the season; 3, Rosemary Russet.

NAMES OF PLANTS: *F. E. S.* 1, Omphalodes verna; 2, Amygdalus nana; 3, not recognised, send when in flower.—*S. S.* Agathæa cœlestis.—*A. B. H.* Sisyrinchium grandiflorum.—*R. T. & Sons.* The flowers of A. fulgens appear to be of the variety known as annulata.—*Gardener.* Juniperus communis, the common Juniper.—*T. H. H.* Amelanchier canadensis. Other names are of necessity held over till next week.

NARCISSUS: *Derwydd.* The bulbs will probably come right another season. The variety is N. Telamonius plenus.

PEACH-TREES: *G. G.* The foliage shows no trace of fungi, and the condition of the trees, according to your description, seems to indicate mischief at the roots, as there is no organic disease. The Agaric which you declare is "growing rampant on the borders" was so much crushed that it could not be identified; but the very fact of an Agaric growing rampant in the soil indicates that it is so full of mycelium that it cannot be fit for fruit-trees to be planted in. We should advise you to see to the roots, and replace the soil during next autumn.

PLANTS FOR EXHIBITION: *Perplexed.* So much depends upon the character of the exhibition, the opinions of judges, and the means of cultivation you can command, that we are unable to answer your list of questions in a manner that would be conclusive.

POTATOS: *Perplexed.* The land being so poor as you describe it, should have been manured last autumn. As this was not done, there is no choice but to apply a good dressing of well-rotted farmyard manure before planting the tubers. In other circumstances we should not advise applications of manure to land intended for Potatos, for in a large garden it is generally possible to select a site for this crop where the soil having been heavily manured in the previous year is still in good condition, and tubers grown in such soil are generally better in flavour and have cleaner skins than when manure is applied at the time of planting.

ROOT CROPS: *Perplexed.* See the notes appearing week after week in the Calendar, under the heading "Kitchen Garden."

ROSES: *W. D.* The buds have been checked in their growth, perhaps by cold draught. There is no insect nor fungus visible.

ROYAL HORTICULTURAL SOCIETY'S GARDENS AT WISLEY: *W. H. C.* Any Fellow can gain admittance to these Gardens on showing his ticket, or a visitor on presentation of a Fellow's transferable ticket, each of which will admit three persons. The Gardens are open for inspection on Bank Holidays and ordinary week days from 9 A.M. until sunset, but are closed on Sundays, Good Friday, and Christmas Day. Our issues for January 23 and March 19, 1904, contain particulars of the best routes to Wisley.

VINE-LEAVES: *A. B.* The leaves you have sent us are very thin in texture, and appear to be ill-nourished. Perhaps you are subjecting them to rather more heat than is essential. Ventilate the house more freely during calm weather. Blisters on the leaves usually arise from unsuitable atmospheric conditions, when the temperature is high and the atmosphere humid and close through lack of sufficient ventilation.

WIREWORM IN SOIL: *Subscriber.* The best remedy for these pests is an application of gas-lime in a caustic state, but it must be applied when the land is free from crops, as it kills all it comes in contact with, whether animal or vegetable life, although this effect goes off after some time has elapsed. Encourage such birds as rooks, starlings, and plovers. Fowls will eat the grubs if they are allowed on the land.

COMMUNICATIONS RECEIVED.—J. H. A. (next week)—Dobbie & Co.—Subscriber.—W. C.—J. T.—T & Co.—D. & Co.—J. C.—Evesham.—T. P.—A. C.—W. H. S.—A. R.—L. L. Grantham.

(For Markets and Weather, see p. x.)

THE
Gardeners' Chronicle

No. 957.—*SATURDAY, April* 29, 1905.

CONTENTS.

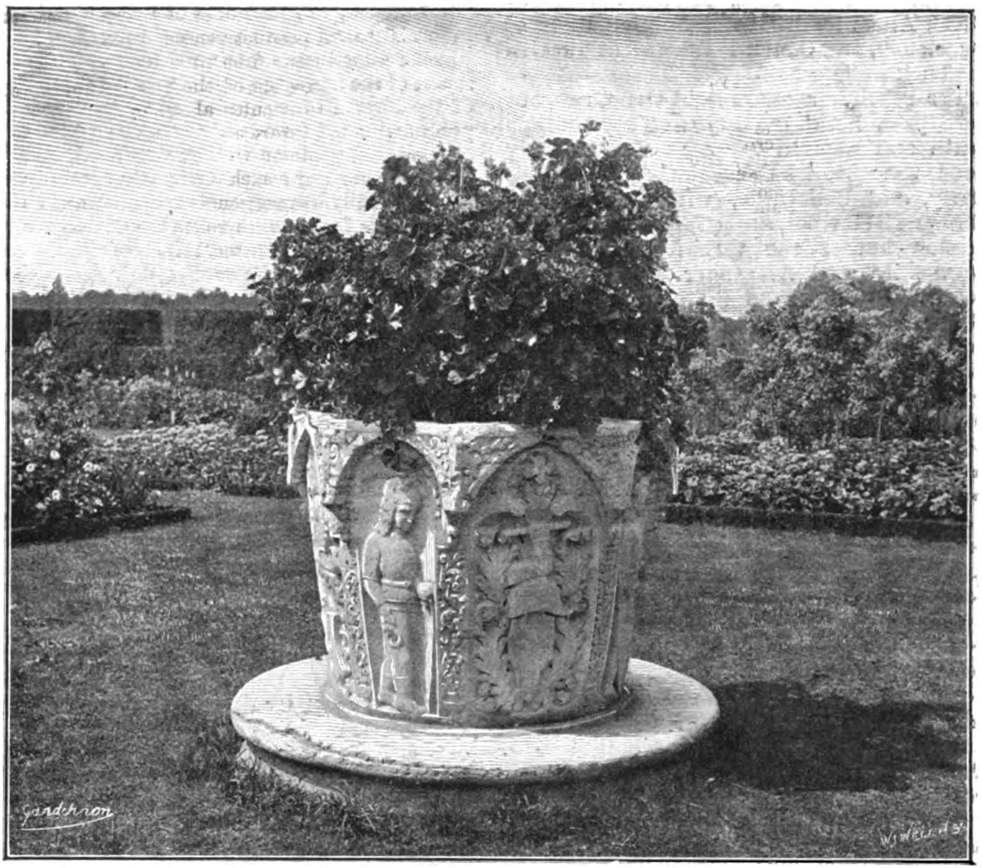
Alpine garden, the ... 261
Auriculas 266
Cherry, the Chinese ... 262
Cucumber "spot" disease... 265
Cypripedium Fairieanum re-discovered 265
Daffodils, popular varieties of 265
Dendrobium Wardianum 266
Japanese Garden, lectures on 268
Kew notes 261
Magnolia Kobus ... 265
Mushroom disease ... 265
Nepenthes, the pitchers of 260
Nursery note—
 James Veitch & Sons, Chelsea 262
Obituary—
 Burvenich, Julian Victor 271
 Horne, John 271
 Low, Sir Hugh ... 264
 Newbigging, John ... 271
Palm, a branching ... 263
Peach-trees and manure-water 260
Phœnix Robelini ... 266
Plants, deterioration of vegetatively propagated 264
Plants, new or noteworthy—
 Cyrtanthus inæqualis 261
Potatos 258, 268
Rosa sorbiflora ... 266
Tennis lawns 272
Tylney Hall, near Basingstoke 257
Societies—
 British Gardeners' Association ... 271
 Chester Paxton ... 270
 Gardeners' Debating 271
 Linnean 270
 National Auricula and Primula ... 269
 Royal Botanic ... 270
 Royal Horticultural 266
Vilmorin Memorial, the 265
Weather in Warwickshire, the 266
Week's work, the—
 Flower garden, the 263
 Fruits under glass... 262
 Hardy fruit garden 263
 Kitchen garden, the 263
 Orchid houses, the 262
 Plants under glass... 262

ILLUSTRATIONS.

Cyrtanthus inæqualis, a new species 261
Magnolia Kobus (Supplementary Illustration)
Tylney Hall, view in the gardens at 259
View in the Japanese Garden at Gunnersbury House, Acton 269
Well-head, an old Venetian, in Tylney Hall Gardens, Hampshire 257

TYLNEY HALL,

THE seat of Lionel Phillips, Esq., is pleasantly situated on a commanding eminence 2 miles from Hook Station on the London and South-Western Railway line from Waterloo to Southampton, and 6 miles from Basingstoke. The mansion is a large and stately building of red brick and white stone, erected by Mr. Phillips five years since. In 1879 a house was rebuilt on the old site by Mr. Charles Edward Harris, who planted most of the trees with which the grounds are now furnished, for a previous owner had cut down all the principal timber on the estate; thus there is now a scarcity of desirable trees in the park and elsewhere. The park has been extended recently, and now covers a considerable area of ground. The soil is a mixture of clay, sand, and gravel, on a clay subsoil. Extensive carriage-drives have been formed, and the older ones altered to suit the more modern styles of arrangement. That leading to Hook station is about a mile long, and passes through an avenue of recently-planted Chestnuts. Another one that leads to the village of Rotherwick, in a northerly direction, is a trifle shorter, and passes through an avenue of Limes that was planted about twenty-five years ago. On the western side there is a delightful grass glade some 40 yards wide, well furnished with Sequoia gigantea [Wellingtonia] and Pseudotsuga Douglasi [Douglas Fir], 40 feet high; Abies grandis, 60 feet; Cedrus atlantica, Cupressus nootkatensis, &c. These are growing grandly, and will soon require more space.



[*From a photograph by F. Mason Good.*

FIG. 108 —ANCIENT WELL-HEAD IN TYLNEY HALL GARDENS.

On the east side or carriage-entrance a good view is obtained over Hazley Heath and Winchfield. An avenue of Limes, 600 yards long on that side, is effective on the grass. On the site of a former carriage-drive, Douglas Fir, Cedrus atlantica, Abies concolor, and A. Nordmanniana have been planted extensively.

The pleasure-grounds are charmingly undulated north-west of the dwelling-house, and much planting has been done with Rhododendrons and Bamboos under the existing forest-trees. There are also bold groups of such subjects as Spiræa Thunbergii, Ribes, Olearia Hastii, Andromedas, Skimmias, Golden Privet, and Forsythia suspensa, on a broad winding border, backed up with a Laurel screen. Bulbs have been naturalised under trees and in the grass, including the finer examples of Narcissus, such as Emperor and Sir Watkin, also Sternbergias, Colchicums, and Anemones. A winding, woodland path has been formed under forest trees and is planted with bold groups of Iris, Cotoneaster, Gaultheria Shallon, Bamboos, Kniphofias (Tritomas), and Anemone japonica.

The terrace-garden, so well illustrated at fig. 109, has a distinctly imposing appearance on the north-western side of the house, and is bright in summer with the beds containing well-grown flowering plants. The beds are surrounded with grass, and have Box edgings.

Roses are cultivated extensively, and all the best of the new varieties are obtained as they appear. A hedge on each side of a broad carriage-drive 200 yards long is composed entirely of climbing varieties, such as Euphrosyne, Crimson Rambler, Waltham Rambler, &c. That charming free-flowering variety, Pink Roamer, covers the low south wall of the plant-stoves. Near the house is a large square planted with Tea and H.-T. varieties, and in the grounds a circular plot 40 yards wide encircled with a Yew edge contains hybrid-perpetuals, with Crimson Rambler trailing over the central arches.

The yellow Banksian Rose is luxuriating on the walls of the house, while other climbing varieties are growing freely over a Larch-constructed pergola leading up to the gardener's house in the fruit-garden. At the base of the pergola are planted herbaceous and bulbous plants, including a choice collection of Peonies.

Much attention is given to hardy herbaceous flowering plants. In the fruit-garden of eight acres two grass paths 12 feet wide are formed with proportionately-sized borders on each side and backed up with bush-grown Apple-trees. The herbaceous flowering plants in these borders are grouped in bold masses of one kind.

On the north side of a pond near to a glass-house, the passing road is protected by a steep rockery wall down to the water's edge. A fine effect in colour is obtained from Aubrietias, double white Arabis, Arenaria balearica, Primula viscosa, Phloxes, Achillea umbellata, and other plants.

Hardy fruit trees are grown against walls facing to the south, east, and north respectively. Standard Apple and Pear trees growing in grass promise well for good crops, and there are breadths of Gooseberry and Currant bushes and of Strawberry plants.

Fruit and Plant Houses.

The vineries are not upon an ideal site, for some of them have a westerly aspect. In all cases the vines have been planted six years, and abundant room was given for extension of growth. Spaces of 4 feet 6½ inches are allowed between the rods, and all are trained on the single rod and spur principle. The back walls are furnished with Vines too, which as yet have furnished good crops. One house is devoted to the variety Muscat of Alexandria, another to Black Hamburgh, one to Lady Downes and Gros Colmar, another contains Madresfield Court, Mrs. Pearson, Mrs. Pince, Black Alicante, and Gros Maroc. Such varieties as Black Alicante, Diamond Jubilee, Duke of Buccleuch, and Canon Hall Muscat furnish the back walls.

The Peach-houses are light structures, but perhaps a little too lofty. They occupy south and western aspects. In the early house the varieties Crimson Galande, Hale's Early, and Bellegarde, with Dryden and Elruge Nectarines, are cultivated. In succession-houses the varieties Marquis of Downshire and Alexander Noblesse, with Stanwick Elruge and Précoce de Croncels Nectarines are the leading sorts. In all cases the trees are remarkably healthy, and carry full crops of promising fruits.

Apples and Pear trees in pots are a feature; the trees are thickly set with fruit. Melons are cultivated in low span-roofed houses exactly suited for their culture. The varieties Best-of-All, Superlative, and Ringleader are most appreciated. Tomatos are required in considerable quantities, Sutton's A 1 being a popular variety for its free-bearing habit.

One of the principal uses of the plant-houses is for the cultivation of suitable plants and flowers for decorating the dwelling-house. Begonia Gloire de Lorraine has been extremely fine, a few specimens were fully a yard in diameter and as much in height. The plants were raised from leaf cuttings inserted in November. Schizanthus wisetonensis was effective in small pots. Carnations of the Souvenir de la Malmaison type receive a large share of attention, the health of the plants being all that could be desired. One thousand five hundred plants of Chrysanthemums are grown, and look well. Celsia Arcturus, Francoas, Liliums, especially of the L. speciosum type, Plumbago rosea, Hydrangeas, and Heliotropes in considerable numbers are pictures of good cultivation. A light, well-constructed house is occupied mainly with Codiæums (Crotons). A collection of Orchids is being gradually acquired, such useful kinds as Odontoglossums, Cattleyas, and Oncidiums, with Calanthes, are promising. A small yet effective rockery and fernery are interesting features, and there is a grand specimen of Cibotium Schiedei. A number of exceedingly fine standard and pyramidally-trained Bay-trees, with grand specimen plants of Hydrangea Hortensia, are employed with good effect in suitable positions outside the dwelling-house.

The offices, tool-sheds, fruit-room, bothy, &c., have been built with all modern conveniences, being efficient and durable. Since Mr. Phillips came into possession of the place seven years ago, improvements have been carried out to the advantage of the immediate neighbourhood. The garden is under the management of Mr. Foster, who was an apt pupil of Mr. McHattie when at Strathfieldsaye, and it promises to become one of the best gardens in the county for horticultural interest and good "keep." The *employés* on the estate have their athletic tastes catered for liberally—a capital cricket and football ground is provided, and in order that the gardeners may practise these games they are given a half-holiday on Saturdays. *A Wanderer.*

THE ALLEGED DETERIORATION OF POTATOS.

The special question under consideration is how far, if at all, varieties of Potatos deteriorate in quality or productiveness during the years which follow their first introduction. From the report of the meeting of the Scientific Committee of the Royal Horticultural Society on March 28, published in the *Gardeners' Chronicle* on April 8, it appears that opinion was then very much divided as to whether any such deterioration occurred or not, and this divergence of opinion was also apparent in the letters read to the Committee on the 11th inst. One writer, I think, even went so far as to say that because varieties of Vines, such as Black Hamburgh, or varieties of Bananas, &c., never vary or deteriorate from year to year, therefore no deterioration could take place in other plants, such as Potatos. Another expressed the opinion that because certain varieties of Potatos, such as the Ashleaf, may be as good now as when first introduced, this in itself proved that the same was true of all other Potatos.

It was even suggested that one reason why the deterioration of Potatos was so much spoken of was in order to create a demand for newly-introduced varieties at much higher prices than the older sorts, which, according to the writer (or speaker), would have been as good now as they were at first if they had received the same careful and liberal treatment always accorded to high-priced novelties. It is not conceivable that any merchant whose reputation depended upon the introduction of Potatos of sterling merit would discard a sort which continued to maintain its original quality and productiveness in view of the fact that many seedlings do certainly deteriorate rapidly. There are, however, noteworthy exceptions. The Ashleaf is certainly one that has "come to stay," and the "Early Rose" is perhaps more widely grown in Europe now than at any period of its existence. "Magnum Bonum" has also a record almost unequalled, and under certain aliases may have continued longer in general cultivation than has been supposed. The old "Redskin Flourball" is another notable case of long-continued productiveness; the "Maincrop" Potato, a beautifully formed white kidney, raised by Mr. James Clark, of Christchurch, Hants, about thirty years ago, still is one of the most profitable Potatos grown in the east of Scotland for the London market. The "Maincrop" does not yield, and never has yielded, so heavily as some varieties, but the quality is uniformly good. The "Langworthy" very closely resembles "Maincrop" in these and other characteristics. Sutton's Early Regent and Sutton's Ringleader, both raised by Mr. Robert Fenn, have been widely grown for more than twenty years, and show little, if any, signs of deterioration. Sutton's Discovery so far has not shown any sign of deterioration, no single case of a diseased tuber having yet been recorded, so far as I am aware, in England.

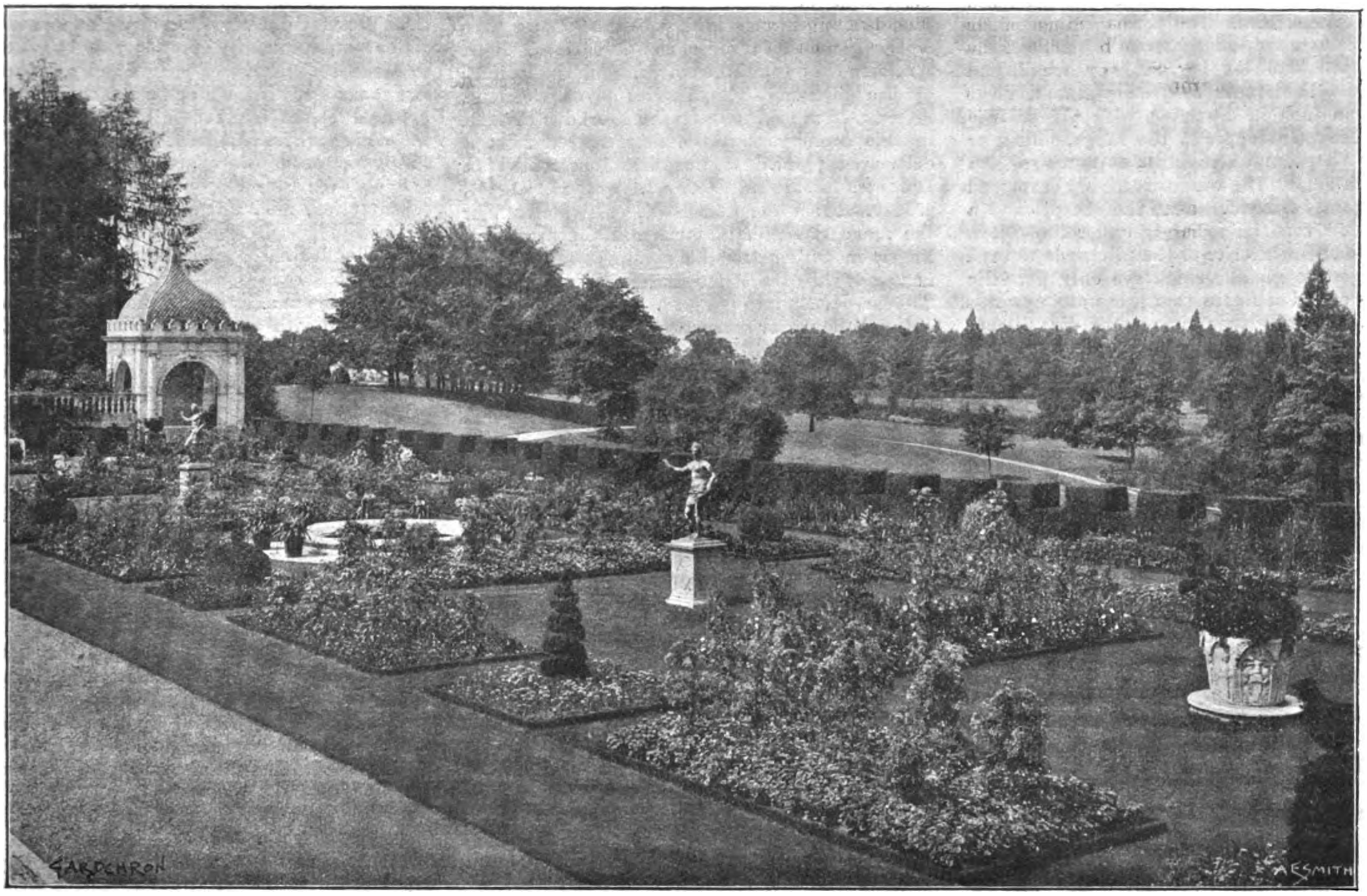
I have nevertheless no hesitation whatever in affirming that all who have had much experience in raising and introducing seedling Potatos know perfectly well that it is not a question whether Potatos do or do not deteriorate; the great question in introducing a seedling Potato is whether it possesses such a constitutional vigour as will enable it to maintain its productiveness and "quality" for a reasonable number of years. A Potato seed-berry may contain from two to three hundred fertile seeds, and no two of these are likely to produce plants exactly identical. As great variation will be seen in the shape of the tubers, the colour of the skin, the depth of the eyes, the colour of the flesh, the colour, form, character, and height of the foliage; the time of maturity, whether medium, early, or late; and the degree of productiveness. It is equally true that a similar variation exists as to the extent to which the several seedlings will be able to maintain their original productiveness and quality. Seedling Potatos are not as a rule put into commerce until the fifth or sixth year; and it often happens that those which show the greatest promise in their second or third year have been entirely surpassed in the fifth or sixth year by seedlings which gave little or no promise in the first, second, or third year. I remember the case of three or four out of a large batch of seedlings which gave extraordinary promise, and these were grown on to produce stock, but by the sixth year they had manifested such marked signs of deterioration that they were not put into commerce at all; whereas others which showed little or no promise at the beginning became very popular varieties.

Then as regards disease, many seedlings are very often quite free for four or five years, and in the sixth or seventh year succumb to attack. If all this be true of seedling Potatos before they are distributed, it naturally follows to a greater or less extent the same tendency to deteriorate will be seen during the succeeding years the introduction into commerce. Those who have facilities for raising and testing simultaneously several hundreds of seedlings can, nevertheless, form a fairly accurate opinion by the fifth, sixth, or seventh year as to which out of so many seedlings is most likely to maintain its original vigour for a period sufficiently long. Where a comparatively small number of seedlings are raised year by year, it must, in a great measure be guess-work as to what the future has in store for the seedlings. Undoubtedly pedigree in crossing is of great value, but even when the Potatos raised are the result of distinct cross-fertilization, very few of the seedlings will exhibit the distinctive characteristics of either parent, although the qualities of both may be combined in many of the seedlings. I am, of course, only speaking of Potato crosses and Potato seedlings.

On the other hand, a "natural seedling," i.e., a Potato raised from the seed-berry of a plant without cross-fertilization, will often bear a very close resemblance to its parent, in some cases so close as to be scarcely distinguishable, but the experience of twenty-five or thirty years would certainly lead me to say that such "natural seedlings" are far more likely to deteriorate than those obtained by cross-fertilization.

It must not be forgotten that it is extremely difficult to secure exactly the parentage which Potato-raisers often desire, in the first place because many Potatos produce few, if any, flowers, and some others which do flower produce little or no pollen, and also where pollen is produced it may not be available exactly at the right moment. But for these difficulties the judicious selection of parents might have a still greater effect upon the seedling Potatos introduced into commerce.

A great deal has been said and written as to the necessity of rigorous selection in order to prevent or postpone deterioration. Mr. Burbidge, on page 238 of the *Gardeners' Chronicle*, quotes (but I believe inaccurately) Professor Hugo de Vries in support of selection as a means of both improving any variety of Potato and of preventing its deterioration.



[*From a photograph by F. Mason Good.*

FIG. 109.—TYLNEY HALL: VIEW FROM THE WEST TERRACE. (SEE P. 257.)

Professor De Vries, whose experimental work will be closely followed by horticulturists, even though they may be unable to adopt the "Mutation theory" for the origin of species, very truly shows that any crop of corn or roots consists of individuals of varying vitality and productiveness, and that this makes selection possible and desirable. I cannot think that Professor De Vries would for a moment include Potatos as roots in this connection, and without a precise reference to De Vries' work, I cannot verify the quotation. Though the several plants in a corn or root crop are all separate individuals, as De Vries says, it is entirely otherwise with Potatos. In the case of Potatos, we all know that, if the crop is not mixed, only one "individual" is represented in a crop, even if the field should be 50 or 100 acres in extent. Each plant is but a portion, in a semi-dormant state, of the plant which flourished in the previous season, and no selection in the world can make the plants of one year vary or differ from those of the previous year, of which they are integral parts. This can be proved by anyone who can devote the necessary time and ground to careful experiments, but I am aware that there is a common prejudice against this very obvious fact.

Had Professor De Vries been speaking of the selection of Potatos he would of course have referred us, not to a crop of any one variety, each plant the same as the other, but to the "nursery bed" where the seedling plants were first raised from seed. It is here, and here alone, that we can say truly that a crop of Potatos "consists of individuals of varying vitality and productiveness." It is here alone that selection can be and is usefully employed by Potato raisers, and during the following years when the "individuals" in groups, propagated directly from the original seedling plant, are grown side by side for the purpose of eliminating the least promising and retaining only those which are superior to others. Any selection after the first year is of course applied, not to single tubers nor to single plants, but to the several groups of plants representing each original seedling.

It has been stated that the selection of small tubers for planting leads prematurely to deterioration, but provided each tuber be fully matured, the size of the "set" planted does not greatly affect the crop, although the result of long-continued experiments points to medium-sized "sets," uncut, as giving the best return.

The fact that some varieties produce seed very readily and others do not, has been referred to as a possible explananion of deterioration; but the "Ashleaf" is one which produces seed-berries quite as freely as any other variety, and it is the leading example of a Potato which shows little or no deterioration.

The method of storing "seed Potatos" during the winter certainly has great influence on the succeeding crop. "Sets" which are allowed to shrivel and exhaust themselves by throwing out long sprouts, which are rubbed off before planting, are naturally greatly inferior to those which have been well kept from the time of raising the crop in the previous autumn.

Deterioration can certainly be postponed by a frequent change of seed from another district, and experience points to Scotland as the source from which such a change of seed is likely to give the best result. The reason why this is so has not been fully shown. It is thought by many that the moister and cooler soils of Scotland prolong the period of growth, and thus prevent premature ripening of the tubers. It is very interesting to note that even in Forres, N.B., Mr. Fraser obtains the best results by getting his change of seed from a higher, colder, and later district, and that the worst results are from the dryer and warmer soils.

It may be interesting to note that in the first two or three years of a seedling's existence there often are very many more fibrous rootlets produced than in subsequent years, and this naturally may account for greater vigour and robustness. In the fourth, fifth, or sixth year these fibrous rootlets often decrease in number, but a Potato which retains such a habit of growth may also conceivably be less liable to degeneration.

It is sometimes considered that Potatos improve in quality after they have been put into commerce, and there are instances which seem to prove this to be the case. It may consequently be true that vigour of growth and "quality," or flavour, are rarely found united in one variety—in other words, that improvement in "quality" has been accompanied by loss of productiveness.

Certainly it is the case that the one thing market dealers are now demanding more than anything else is "quality" and flavour, and no one can well dispute the fact that few, if any, of the Potatos in commerce to-day either equal or surpass in flavour the old Dunbar Regent. If this be so, nothing but deterioration or degeneration can possibly account for the total disappearance of this Potato from commerce at the present day.

In my opinion the best safeguard against premature degeneration will be found in the exercise by raisers of greater caution in the introduction of new varieties; by growing a larger number of seedlings side by side under precisely similar conditions, and by subjecting them to a far more critical comparison with the best varieties already in commerce, so that only those which show very marked superiority and constitutional vigour may be chosen for introducing to the public. *Arthur W. Sutton.* (*Letter to Dr. Masters, read to the Scientific Committee on April* 25.)

THE PITCHERS OF NEPENTHES.

(*Concluded from p.* 242.)

THE collar of the pitcher of *N. Veitchii* fully deserves the name. It is of the turned-down type, broad and frilled, and brilliantly coloured. Its interior margin is like a comb with very sharp teeth, and the deeply-seated glands are in this species between the teeth, instead of in the teeth, as in N. echinostoma. The pore-openings of the excretory ducts are so large as to be visible to the naked eye. The lid is relatively small, and furnished with thousands of honey-glands, about $\frac{1}{30}$th of an inch in diameter, with a few large ones at the point opposite the hinge, oblong or ovoid in shape, and sometimes as much as $\frac{1}{12}$th of an inch long. The wings are highly developed and elegantly fringed. With the exception of a very narrow zone immediately under the collar, the whole of the interior of the pitcher is covered with digestive glands, which are only partially over-arched. I estimate that there are upwards of half a million glands in a medium-size pitcher of this species.

N. Northiana is one of the handsomest species of the genus, and our slide was prepared from the late Miss North's original drawing as it appeared in the *Gardeners' Chronicle*. The pitchers were upwards of a foot in length, and green spotted with purple. The mouth is very oblique, with a collar similar to that of N. Veitchii, and the lid is remarkable in having two prominent ribs with a central band of honey-glands from base to apex.

The pitcher of *N. bicalcarata* has, in addition to the usual spur outside by the hinge of the deeply cordate lid, two other strong, curved spurs under the lid, projecting from the top of the long neck forward over the mouth of the pitcher. These so-called spurs are strong, sharp spines, and so placed that they would prevent the egress but not the ingress of small birds or mice. The frilling of the collar is very fine, and the interior surface of the pitcher is wholly glandular, the glands being the smallest I have examined, numbering from 15,000 to 20,000 to the square inch, as deduced from numerous careful computations. This species is also remarkable for the perithecioid glands, a tenth of an inch or more in diameter, on the thickened tendril, near the base of the pitcher.

N. celebica differs from all the others I have examined in having a horn-like appendage projecting from a notch in the lid on the distal side, or that farthest from the hinge. There is also a remarkable development of a knee-like intrusion on the under side of the lid.

Both Mr. Moore, of Glasnevin, and Mr. Tivey, grower for Messrs. James Veitch & Sons, inform me that the pitchers of the two sexes often differ, the female being the more attractive. N. Burkei is an instance; N. Burkei excellens being the female. N. Curtisii and N. C. superba bear the same relations to each other. The tendril of the female is no longer than the pitcher, whereas it is at least twice the length in the male. Mr. Farmar tells me he has noticed this in other species. Another peculiarity in N. Burkei is the reversed position of the pitcher in relation to the tendril in both sexes.

N. ampullaria is remarkable for the smallness of its lid, which is turned back, away from the mouth of the pitcher, and has no honey-glands on its under surface; but there are stomates, which is, I believe, quite exceptional.

N. Reinwardtiana is distinguished by having two eye-like spots near the top on the inside of the pitcher. This species has perhaps the narrowest collar of any, and the transverse rings or plaits are exceedingly thin. The contrast in the colour of the smooth and glandular zones is very striking. I have not investigated the nature or cause of the spots, but they appear to be constant.

N. Khasiana has an exceedingly neat, narrow collar, with very numerous narrow transverse rings. On the underside the lid is uniformly covered with honey-glands. But it is the conductive zone of the interior of this pitcher which is specially attractive. It occupies nearly two-thirds of the space, and is of a bright red colour, contrasting well with the yellow glandular zone, in which the glands appear as dark dots, distant from each other from one to three of their own diameters. The dark appearance is due to the greater part of the glands themselves being visible. A dried specimen shows well the colouring of the interior of the pitcher. This species is of historical interest, from having been the second cultivated in this country, and the first figured from a cultivated plant. It was first represented in Loddiges' *Botanical Cabinet*, vol. xi. (1825), t. 1017. From the first it was cultivated under the name of N. distillatoria, and the name still lingers in gardens for this species; so difficult is it to get rid of a name under which a plant is first introduced into gardens.

In all the various structures, the arrangements are such as to facilitate the ingress and to hinder the egress of such insects and other creatures as are tempted within the reach of the various influences. I may add that plants in captivity, otherwise in cultivation, are often very active in the capture and consumption of insects, though it is not necessary for their existence. But a certain wily kind of ant has succeeded in obtaining the liquid from the pitcher of *N. bicalcarata* without risk, by boring a hole in the tendril near the base of the pitcher, when the liquid oozes out out for the benefit of the ingenious creature. Mr. Burbidge, Curator of the Trinity College Botanic Garden, Dublin, discovered this trick during his travels in Borneo. The tendril at this point is abnormally thickened, and the same thickening takes place in the cultivated plant, although it is not perforated.

In relation to the carnivorous nature of Nepenthes, certain species seem to be more attractive to insects than others, or perhaps the fact of their entrapping more insects may be accidental and due to their position. I am speaking of plants under cultivation. In some pitchers I found only ants; in others, various beetles and cockroaches and ants intermixed. A plant of *N. bicalcarata* in a pot partly immersed in the water of the tank in the Victoria-house, had its pitchers half filled with insects, chiefly beetles in various stages of decomposition. Professor Macfarlane mentions that a pitcher of N. Hookeri under observation caught seventy-three cockroaches within a fortnight, having been emptied three times during that period. A valuable plant, indeed, in a house infested with those destructive insects.

Those desirous of knowing more of the anatomy of the pitchers of Nepenthes and the process of digestion that goes on in them, should consult the writings of Prof. Macfarlane and of Dr. Vines, in the third, seventh, and eleventh volumes of the *Annals of Botany*. The geographical distribution, floral structure, and relationships of Nepenthes are dealt with in the seventh volume of the publication named. A more popular and comprehensive illustrated account of the genus, by Mr. Harry Veitch, appeared in the twenty-first volume of the new series of the *Journal of the Royal Horticultural Society* in 1897. The literature of the subject in other languages is voluminous. A large proportion of the most noteworthy species, varieties, and hybrids have been figured and described from time to time in the *Gardeners' Chronicle*, the first being N. lævis, Lindl., 1848, p. 655. *W. B. Hemsley.*

MANURE-WATER AND PEACH-TREES.

To my mind the reasons given by Mr. C. W. Muir and your old correspondent, Mr. H. W. Ward, do not carry conviction as regards the need of stone-fruits for so much manuring as these cultivators recommended in the issue for April 1. In loamy, naturally fertile soils, and in well-made borders consisting of turfy loam, even when the staple is light, sandy, and shallow, if the borders are dressed annually with light, well-rotted stable-manure, but little more is required than to afford plain water several times during periods of drought in the months of July, August, and September; and we sometimes experience wet summers when even these applications are better withheld. I have in my mind only open-air culture, for under glass the conditions are very different, and heavy applications of water more frequently afforded may be called for to assist the growth of shoots and give greater size to the fruit if the crop be an abundant one.

I hold that if fruits be of the normal size for the variety, there is a great loss of flavour if the size is increased to any great degree, and this is scarcely ever desirable when the fruit is for home consumption, fine, full flavour being considered by good judges preferable to mere size. That a Peach border should be maintained in an uniformly moist condition by artificial watering from March to the middle of the month of September is an axiom with most intelligent gardeners, and they endeavour to carry it as far as their means will allow. I have had to do with the Peach, Apricot, Plum, Pear and other fruits for many years on a variety of soils and in different parts of England, and have rarely known much need for the application of water, the natural rain and snowfall being all-sufficient in the majority of years, a thin mulch of half-decayed litter applied after June was out meeting all needs.

If a Peach-tree is lightly cropped, as will sometimes occur from loss of bloom by frost, from removal, transplantation, or over-severe root-pruning, and the prospect of a sufficiently vigorous growth of shoots appears good, applications of manure-water in the summer months are more likely to do more harm than good by unduly increasing the strength of the year's shoots and hindering their maturing. Better thin well-ripened shoots than willowy gross ones that never ripen except at their bases. Trees which bear well every year may need a little more assistance than the soil can supply and I have indicated, but no more should be afforded than will bring the fruits to perfection and furnish fruitful wood.

Climate and local conditions as regards rainfall are matters every gardener must take note of, or he will have to record more failures than successes in the cultivation of the Peach, Nectarine, and Apricot. Of much importance are the rainfall, nature of the soil, the width of the border, its condition as regards drainage, and the depth of the roots below the surface. A good many years ago the writer took charge of a large garden in a southern maritime county. The rainfall (local) was heavy, and during the summer months sea-fogs would fill the valley in which the garden was situated for a week or longer at a time, and under these conditions no artificial applications of water were ever necessary. Splendid Peach and Nectarine-trees covered two south walls, the gross shoots well trained, and foliage as healthy as could be desired. The owner informed me despondingly that these fine trees seldom carried a fruit. Gardeners at that time were just acquiring a knowledge of the benefits derived from the root-pruning of fruit-trees, but the gardener I superseded either knew nothing of this, or he had not put it into practice, and contented himself by trying to check the exuberance of growth by hard pruning. I could at once perceive the trees could be restored to fruitfulness by lifting and replanting them in a wider border, keeping the roots near the surface, and preventing them entering the cropped ground in the area beyond the tree-border. Replanting was carried out during the same year, and two years later the trees bore more fruits than could be consumed by the family.

Instead of following the advice of your two correspondents, if gardeners with overflowing manure-water tanks would apply their contents to gross-feeding vegetables—as Celery, Asparagus, Cabbages, Cauliflowers, and the like, to aged Pear and Apple-trees, especially to such as may be growing in grassed orchards and worn-out lawns—much good might be done. It will be found that good results follow the severe thinning of all kinds of stone fruits on walls and bush trees when the set has been more abundant than usual, and applying manure-water only to palpably infertile, thin, or gravelly soils. *F. Moore.*

ALPINE GARDEN.

ANEMONE HEPATICA "TORCH."

THE variety of Anemone Hepatica known as "Torch" is the best of the Hepaticas, being brighter even than that fine crimson or rather almost magenta form of Anemone Hepatica called splendens, while the flowers are considerably larger in size. It was raised by Mr. James Allen, of Shepton Mallet. The flowers are as large as those of the different forms of Anemone (Hepatica) angulosa, and look exceedingly bright in the garden in March and April.

VERONICA FILIFOLIA.

Numerous as are the dwarf and other Speedwells in our gardens at the present time, the little Veronica filifolia should be grown where possible, as it is not only very distinct, but also very beautiful indeed to those who can appreciate modest alpine flowers. It is still far from plentiful, and is a plant which I lost about two years ago through some want of care; but from my experience of it for three years I believe it to be quite hardy, and I attribute its loss to the want of a top-dressing one spring remaining unsupplied. I have not seen it mentioned in British catalogues, but I observe that seeds are now being offered by Messrs. Thompson & Morgan, of Ipswich. It came to me from France, and I considered it one of my prettiest alpine flowers. Its character is well indicated by the specific name of filifolia, as the foliage is extremely narrow and linear. The flowers are white with little markings of blue, and the whole effect of the plant is delightful in the extreme. The plants grow only about 6 inches high, and have a trailing habit. I grew my plant on a terraced rockwork with an exposure almost north-east, and well shaded from the sun except when it was about the meridian. The soil was sandy peat, and the plant was watered in dry weather. Until I lost the plant it seemed to thrive well under such conditions, and I look forward to growing it again.

PULMONARIA ARVERNENSIS ALBA.

This is a pretty little early-flowering Lungwort which has not yet been generally seen by cultivators. It never reaches more than from 4 to 6 inches in height here, and has rather dull, green leaves, and bears a number of neat white flowers. The plant appears to thrive perfectly well in shade, and it is not fastidious as to soil. The Auvergne Lungwort was, I believe, introduced some years ago by Messrs. James Backhouse & Sons, of York, but is now in the hands of a few other nurserymen. I have had it in my garden for four or five years, and find it perfectly hardy. Though not among the choicest spring flowers, it is a little plant which ought to meet with some recognition. *S. Arnott, Carsethorn-by-Dumfries, N.B*

NEW OR NOTEWORTHY PLANTS.

CYRTANTHUS INÆQUALIS, *n. sp.**

IN January, 1904, there flowered in the nurseries of Messrs. Wm. Cutbush & Son at Barnet a Cyrtanthus, three bulbs of which had been collected by the Messrs. Cutbush's sister in the neighbourhood of Georgetown, Cape Colony. More than one expert in Amaryllideæ mistook it for Cyrtanthus angustifolius grandiflorus (Baker), but on the inflorescence being submitted to me I at once pronounced it to be a new species, its chief distinguishing features being the more or less erect habit of the flowers, the larger perianth-segments, and especially the peculiar manner in which the upper three associate and form a pent-house over the stigma and anthers, which are not protruded, as in most members of the Monella section of Cyrtanthus. I sent a drawing of the inflorescence to a friend in S. Africa, who fell into the same error as others had done, and taking it for C. angustifolius grandiflorus, sent to the Tulbagh district of Cape Colony, on the opposite side to that in which the specimen in question had been collected, and obtained for me a few bulbs of C. angustifolius grandiflorus (Baker)—the first to arrive in England, I believe. My daughter had previously made a drawing of Cyrtanthus inæqualis (fig. 110 [1]), and we were enabled to include one of the true C. angustifolius grandiflorus (fig. 110 [2]). Reference to the illustration shows many differences. C. angustifolius grandiflorus, which is a very fine plant, is the largest form of C. angustifolius. The mature bulbs are as large as those of Vallota purpurea, and the leaves in the early stage often three-quarters of an inch across. When in flower the inflorescence is about a foot in height, and the leaves about the same, but when seeding the peduncle elongates, and the leaves also. Flowers scarlet-red.

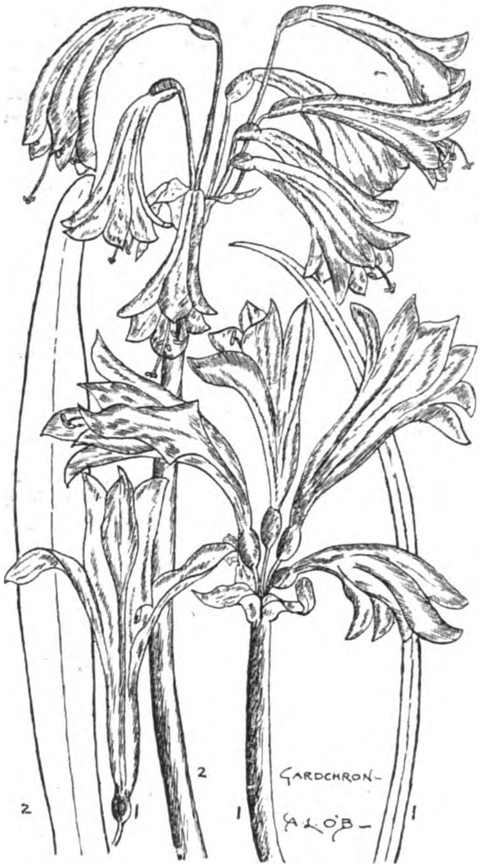


FIG. 110.

(1) INFLORESCENCE, LEAF, AND SINGLE FLOWER OF CYRTANTHUS INÆQUALIS, A NEW SPECIES: COLOUR OF FLOWERS CORAL-RED.

(2) INFLORESCENCE AND LEAF OF C. ANGUSTIFOLIUS GRANDIFLORUS: COLOUR OF FLOWERS SCARLET-RED.

(*Drawn from living specimens by Alice L. O'Brien, and much reduced.*)

Examination of the illustration of Cyrtanthus inæqualis (fig. 110 [1]) will show on comparison that there is very little resemblance to C. angustifolius var. grandiflorus; it differs at all points from the bulb to the flower. Indeed, it is in no danger of being confounded with any other species. The regrettable point is that the exact spot where it was collected cannot be ascertained. Perhaps some reader of the *Gardeners' Chronicle* in Cape Colony may be able to give further information on the subject. *J. O'Brien.*

KEW NOTES.

HECHTIA ARGENTEA, BAKER.—This is by far the most handsome species in a rather small genus belonging to the order Bromeliaceæ. It is extremely rare in cultivation, the Kew plant being probably the only one in this country. It has been grown in the Succulent-house (No. 5) for nearly forty years, first flowering in 1870, again in 1895, and after a lapse of ten years it is once more in flower, carrying two inflorescences, the strongest of which is 4 feet 6 inches in height. This plant is one of the most effective and conspicuous of the many rarities contained in this house. It has about 150 leaves, forming a large dense rosette. They vary in length from 2 to 3 feet, and are 1½ inch broad at the base, gradually tapering to a long slender point. In texture they are very fleshy and rigid, with large curved horny prickles on the margins. Both surfaces of the leaves are a beautiful silvery colour. The flowers are small and white, being developed in dense sub-globose heads towards the top of the peduncle. There are about two dozen heads on each inflorescence. The species was figured in *Botanical Magazine*, t. 7460.

ANSELLIA AFRICANA, *Lindl.*

The genus Ansellia is little favoured by Orchid cultivators generally, yet the plants may be easily grown. They generally flower freely, and when not in bloom are good "furnishing" plants, and may be grown into fine specimens. These characteristics are well marked in the species A. africana, now flowering in the warm Orchid-house. The plant has stout, upright, Dendrobium-like growths 3 to 4 feet in height, each growth having generally about a dozen leathery arching leaves 1 foot to 18 inches in length, and 1 to 1½ inch broad, the inflorescence being a large branched terminal spike. The specimen has six of these inflorescences, the largest of which is composed of ten spikelets with a total of 130 flowers, each having a diameter of 2 inches; the flowers remain fresh for about six weeks. The oblong sepals and petals are light yellow in colour, and heavily barred with chocolate-brown; the side lobes of the lip and the column are marked with light brown colour, the middle lobe being light yellow, and fleshy in texture. It is a native of Western Tropical Africa. The dwarfer plants A. congoensis and A. nilotica are also flowering in the same house. *W. H.*

---

* *Cyrtanthus inæqualis*, n. sp.—Bulb globose, 1½ inch in diameter, prolonged into a neck 1 inch in length. Leaves 2–3 contemporary with the flowers, 1 foot or more in length, linear, narrowest at the base, where they are almost triangular, keeled on the under side, channelled above, green tinged with purple at the base. Peduncle erect, 1 foot high, cylindrical, slightly compressed, hollow, green tinged with purple. Spathe-valves four, two large and two small, lanceolate. Flowers four in an umbel (in the specimen seen), more or less erect, curved; pedicels ¼ to ½ inch; ovary ovoid. Perianth 2½ to 3 inches long, tubular in the basal half, the other half having free segments, the lower one decurved, the lateral two spreading, the upper three inclined forward over the style, that peculiar character being very pronounced when the flowers are mature. Stamens biseriate, three of them reaching nearly to the tips of the segments. Style filiform, stigma tricuspidate, not protruded. Colour of the flower bright coral-red. *James O'Brien.*

TREES AND SHRUBS.

THE CHINESE CHERRY.

The variety known in gardens as Cerasus sinensis rosea var. pendula is one of the earliest to flower of ornamental Cherries, and at the present time is most beautiful. The individual flowers are small, but they are produced in such profusion as to hide all the twigs and branches. Being of weeping habit, the plants should be procured on stems at least 8 feet high. As an isolated specimen planted on the grass or lawn the pale rosy-coloured flowers, together with the general contour of the tree, make it a very cheerful and pleasing addition for large or small gardens. *W. H. Clarke, Aston Rowant, Oxon, April* 17.

NURSERY NOTES.

HIPPEASTRUMS AND OTHER PLANTS AT MESSRS. J. VEITCH & SON'S.

The span-roofed house containing the Hippeastrums presented a gay aspect recently, and the beds, numbering two, instead of three, as in the old structure now demolished, exhibit the flowers in a more telling fashion. The marked characteristics of H. Leopoldi, employed many years ago—viz., large size of segments, and regularity of form, as opposed to the older stellate type imparted by the now discarded H. pardinum—were recognisable in most of the flowers open at the time of our visit. Among seedlings flowering for the first or second time were the following varieties. Mrs. Bilney has bold, finely-shaped flowers, with a white ground and cerise-coloured flame; Rosalie, also white with delicate pink flame, a crumpled margin and warted surface to the segments, is novel both in this respect and in the markings; Orion, a bright scarlet self; Ivanhoe, a scarlet-coloured flower with green-and-white bands running from the margin to the base of the flower; Cyrus, a white flower sparsely lined with red; Scopas, of large size, a fine-looking and striking red flower; Cythera, a smallish crimson self; Vesta, a large white bloom having markings of a shade of cerise; and Iverno, having a flame of dark crimson, and edging to each segment of the same tint.

In one of the flower-houses some new Cinerarias of considerable promise were noted. They will be useful as decorative subjects for conservatories and large greenhouses, in which the more compact low-growing varieties are of lesser value. Of these there were numbers of plants of Feltham Bouquet, large-growing, much branched in habit, and having flowers of a light purple tint. The florets are broader than those of C. stellata, and as the flowers do not form seeds they are the more enduring. The plants are propagated from offsets. C. "Fantasy" somewhat resembles the foregoing, but the florets are convolute and of a bright purple colour. The habit is branching and strong. This plant is capable of forming seeds. Some nicely-flowered plants of Viburnum plicatum, a species not often grown in pots, were noticed. The globular inflorescences resemble those of V. Opulus, but the foliage is different. Plants of Senecio auriculatissimus, illustrated in our issue for April 8 last, were noted in flower, as also were plants of Corydalis Wilsoni, making pleasing dwarf masses of yellow-coloured flowers; and Kalanchoe felthamensis, which flowers earlier than the better-known K. flammea.

In the warm-houses there were remarked some handsome plants of Sanchezia nobilis, with beautiful green-and-yellow foliage; Heliconia illustris, Phyllotænium Lindeni, Dieffenbachia Fourneri, and the yellow-flowered Gomphia oliviformis, a flower of much beauty.

The Week's Work.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Pot Vines.—The earliest of these will have made rapid progress during this month, and as the fruit will now be colouring, a cooler and drier atmosphere, with increased ventilation as the fruit becomes ripe, will be necessary. Discontinue the use of liquid manures, but do not allow the Vines to suffer from want of water at the roots. Allow the laterals to develop a fuller extension of growth at this stage to supply the necessary shade. Home-grown canes raised for fruiting next season must be encouraged to grow freely and strongly by keeping the atmosphere of the house moderately moist, and by paying careful attention to the matters of ventilation, pinching the laterals, and watering.

Planting Vines.—If it is intended to plant in the borders young Vines raised from eyes rooted during February, which have been grown with a view to this planting, preparations for the work should be made as soon as the house can be cleared. In many cases a crop of fruit is taken from the old Vines before the new ones are planted, or the house may have been used for other purposes, but it must now be cleared and put in readiness for planting the Vines during next month. A border 3½ to 4 feet in width and 2½ feet in depth is sufficient for the first season after the Vines are planted, and much will depend on the natural drainage whether it is necessary to construct a concrete bottom. Good drainage of some kind must, however, be provided, at least a foot in depth. When preparing for drainage, commence by laying whole bricks or stones close together, cover these with broken bricks, and finish with a good layer of rough lime-rubble; over this latter place turves with their grass sides downwards. If good fibrous loam of a yellow colour and not too light in texture is used, very little artificial manure will be necessary. Apply a sprinkling of lime-rubble, wood-ashes, charcoal, and bone-meal on each layer, making each layer thoroughly firm as the work proceeds. The quantity of rubble, &c., that will be needed will depend on the nature of the loam. No green manure should be used with the exception of a few fresh horse-droppings, and a little Kirk's or Thomson's Vine Manure applied at the surface of the border. Plant the Vines as soon as the soil is warmed to the temperature of the house. The Vines when planted should be about 2½ feet high, and have sufficient roots to hold the ball of soil together. Plant them 4 feet apart in warm and finely-chopped soil, and afterwards water them, using the water at a temperature of 85°. Keep the atmosphere of the house rather close and moist for a time, and shade the Vines from the sun's rays in the middle of the day until fresh growth has started. Let the temperature at night be at about 65°, with a rise during the day of 10° or 15°, closing the houses early in the afternoon with plenty of sun-heat and moisture present. One-year-old Vines intended for planting should be watered previously, and at the time of planting should have their roots evenly arranged at different depths, varying from 2 to 4 inches. Disbud or cut back the Vines to suit the level of the front portion of the building, and to allow of their proper training.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Prancratium fragans.—Plants that are established well in 8-inch pots require very little attention beyond liberal applications of liquid-manure, obtained preferably from the soaking of sheep droppings in water. Under such treatment the plants will produce numerous spikes of fragant flowers suitable for cutting or otherwise, and well-matured healthy foliage. Unless it is desirable to increase the stock of plants by division of the bulbs they will not require potting for a long time, and an 8-inch pot is a useful size without being inconvenient to move. The plants require to be grown in a light position and a moist atmosphere, and under the following conditions we are able here to cut a quantity of well-developed flower-spikes in August. Through the winter months the plants are grown in a warm, moist atmosphere in a house facing to the north. They remain in this house until the latter end of April, and are then removed to a Fig-house facing to the west, and placed on the border underneath the trees, where they are allowed to remain until the Fig-trees begin to shed their leaves towards the latter part of September, when the Pancratiums are removed to the north house again. The present is a suitable time for dividing old plants. The potting soil should consist of good fibrous loam three parts, spent Mushroom-dung one part, and a little bone-meal, broken charcoal and silver-sand, all mixed well together.

Gloxinia plants that were potted in January are now developing their flowers, and should be afforded a teaspoonful each of Clay's Fertiliser once a week, besides frequent waterings of diluted liquid-manure obtained from sheep-droppings. Seedlings should be potted into thumb-pots without delay.

General Remarks.—After east winds followed by blight, an examination should be made of the plants both in frames and houses. Dipping or fumigating will be necessary in some cases and should be undertaken without delay. Forced shrubs that have passed out of flower should be gradually hardened with a view of planting them out in the pleasure grounds. Prick off seedling plants as they become ready for handling, and admit air sparingly to houses or pits containing plants of young and tender growth.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Phalænopsis.—Many of these plants will soon commence to make a new series of roots. and it is advisable ere these enter the old material that fresh sphagnum-moss or other suitable rooting medium be afforded. Plants grown in baskets should have the old moss removed, and as many of the old crocks as are detachable. When this has been done afford the plants fresh sphagnum-moss and clean drainage material. For several years past we have grown our plants in pans, in a mixture of equal parts of sphagnum-moss, peat and Oak leaves, with a sprinkling of sand and small nodules of charcoal to ensure effective drainage. The pans used should have perforations round the sides, and an inch or more of drainage material according to the size of the pot. When the compost has been worked-in amongst such living roots as are inside, place on the surface a layer 1 inch deep of chopped sphagnum-moss. The materials should be pressed moderately firmly, or in the middle of the season of growth, the leaves having decayed, the compost will be so loose that it will hold water like a distended sponge. When affording new receptacles to plants, separate the roots from the old ones by means of a thin-bladed knife, after soaking them for about an hour.

Cultivation.—If a few plants only are grown they should be allotted a well-shaded position in the East Indian-house, but they can be more easily managed when a separate compartment is provided for them. They may then be suspended from the roof, and the stages beneath may be occupied by many of the warm-growing Cypripediums. The house should be rather heavily shaded at all times when the sun shines upon it. The atmosphere should be carefully regulated in regard to heat and moisture, and at no season need there be an extravagant amount of heat employed. The temperature from the present time until the end of September should range between 65° in the morning to 75° during the day, increasing until with sunheat another 10° will prove beneficial if other conditions are favourable. Secure atmospheric moisture by damping the stages and floors early in the day, and as often afterwards as occasion requires, also by spraying overhead on bright mornings. After the plants have been top-dressed or transferred to new receptacles, they will only need sufficient direct waterings to keep the sphagnum-moss moist, but when rooting freely a fairly generous supply should be afforded. Plants growing in a mixture which includes leaves must be given water less often than other plants, at first in the early stages by sprinkling the surface, and later on by an occasional dip, which should be done quickly to prevent the mass absorbing too much, always allowing them to become almost dry beforehand. Cleanliness is very essential to their health, therefore sponge the leaves several times during the year, and fumigate the plants each month. Fresh air is equally essential, but ventilation should be afforded in such a manner as will not cause draughts, or promote dryness in the atmosphere. Use the bottom ventilators at all times, and the top ones only on exceptionally hot, moist days. P. Schilleriana will stand most strong light, and green-leaved species the least. P. Luddemanniana P. speciosa, P. violacea, P. sumatrana, and others of this section are the most shade-loving. P. Esmeralda and P. Lowii are ofttimes deciduous, and need little water excepting when rooting freely. The stock of several species may be increased by allowing the old scapes to remain, on the chance of young plants developing from the upper nodes. P. Luddemanniana does this habitually, P. speciosa occasionally, P. amabilis and P. grandiflora rarely, and P. Stuartiana projects young plants from its roots occasionally. These may be taken off when they are making roots and be treated separately.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Raspberry-canes.—Let any suckers now appearing which will not be needed be cut off with the hoe, that the plants may concentrate their energies into the development of those required for fruiting next year.

Peaches and Nectarine-trees.—In many districts the trees will have advanced sufficiently for the shoots to be disbudded. The growths from these buds tend to stimulate root-action, therefore the operation of disbudding should be extended over a period of three weeks, and performed by removing occasionally the most advanced shoots, and in such a gradual way that little or no check may be felt by the roots. The work ought to be performed by an experienced man, because no shoot should be left on the tree that will not be required afterwards, nor in a position where it cannot develop perfectly without preventing other growths and fruit from maturing fully. The first operation will be to remove all shoots growing straight out from the branches and those growing towards the wall; a few of the intervening buds may be removed at the same time. After a few days the trees should again be examined, and all weak and badly-placed growths be removed. Then at the final thinning remove those of the remaining shoots which the operator has not selected for the extension and furnishing of the tree. One shoot should be left at the apex of each branch for extension, which if not required for that purpose may be pinched when the limits of space are reached; a second shoot should be left half-way down the branch, and a third at the base in a well-placed position for laying in. Where trees were pruned as advised previously, three growths will be sufficient to leave, but if last year's branches were laid-in full length it may be necessary to leave more. Try and secure young growths to furnish the base of the tree, which in old trees is liable to become bare by reason of the extension system of training. Maiden trees that were planted this season should have their buds reduced to three or five, and the growths that result from these will need to be trained-in at intervals afterwards. If one strong shoot is taking the lead, tie this down first, allowing the others free growth for a time before tying them down, which will help to restore a proportional flow of the sap. Trees which had five shoots trained-in last season may now be allowed thirteen shoots.

Stone Fruits of various kinds are now in flower or unfolding their petals; during the cold winds which are now prevailing means should be taken to protect them. Plums and Cherries may be successfully protected by double fish-netting, but Pears require a more efficient means, especially where the trees are in an exposed position.

Fig trees that were recently uncovered should be afforded temporary protection during such cold weather, increasing the protective material in thickness should there be signs of frost.

Pyramidal and Bush-trees may be protected by Spruce and Laurel boughs tied at intervals to the branches throughout the tree, or a few bushy Pea-sticks may be struck into the ground and covered with Spruce. We have nearly 2 acres of trees here protected by wire-netting. While protecting all individual trees as far as possible, mats are tied to the wire on the east side where the trees are exposed most, and these help to check wind.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Potatos.—Afford free ventilation to the latest Potato plants in warm pits, and should the quantity of soil about them be considered insufficient, that to be added should be placed in a cold frame for a few days previous to being used. Afford water to the Potatos when this is considered necessary, but let it be in moderate quantities and at a temperature not lower than that of the soil in which the plants are growing.

Runner Beans.—In order to secure crops of Runner Beans in the best possible condition, it is essential that the ground be well prepared before they are planted, as few vegetables respond more satisfactorily to liberal treatment than these. The general practice obtaining in these gardens is to prepare the ground as if for Celery, although if the ground be well trenched and heavily manured it will be sufficient for the purpose. It must be remembered that Runner Beans root deeply and are gross feeders, for which reason give liberal supplies of good half-decayed farm-yard manure, and incorporate this well with the soil. It is a good practice when preparing the trenches to do the staking at the same time. The stakes should not be less than 12 feet in length, of which 2 feet is inserted in the ground. If these are placed in single lines no difficulty is experienced in putting in the plants or in inserting the seeds, and it obviates all danger of injury to the roots that would be occasioned if performed later. The alleys between the rows should be about 10 feet in width. The sowing of seeds of Runner Beans out-of-doors for an early supply, and even for the general crop, is a much less satisfactory practice than that of sowing in pots or boxes and afterwards transplanting the seedlings. Plants raised from seeds sown 3 inches apart in boxes can be easily removed, and without injury. The transplanting should be done when the first growth appears beyond the seed-leaves. They must be raised in quite a cool place, and be given plenty of ventilation from the time the seeds are planted in order to secure strong plants. By doing this much anxiety will be saved should frost appear, and insects can be kept in check and the best results secured. The improved types of this vegetable, such as Neal's Ne Plus Ultra, are a great advance upon the old varieties generally grown. Last season the variety "Hackwood Success," raised by Mr. Bowerman, gave good results here. This season we are trying the merits of Carter's Mammoth, a variety raised by Mr. Lye. The first and second weeks of May will be sufficiently early to sow seeds of Runner-Beans.

French Beans.—A sowing of French Beans should now be made upon a narrow border facing to the south. For the first sowing out-of-doors we make the drills 4 inches in depth, and at 18 inches apart. If old potting soil is placed under and over the seeds it will considerably assist germination. In the event of late spring frosts, protection can be provided by placing light Yew branches or any similar material among the tender seedlings. Suitable varieties of French Beans are Favourite, Magnum Bonum, and Canadian Wonder.

Peas.—Pay close attention in the matter of earthing and staking the plants. Neglect in not providing early support to Peas will in a great measure often cripple the crop. Make further sowings as soon as the latest-sown batches are above-ground. Peas growing in pots, or those planted in pits, must be allowed an abundance of air, and a free supply of water at the roots with occasional applications of weak liquid-manure.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Annuals. — Prepare the ground for those annuals, seeds of which will be sown in the positions where the plants will flower. A sandy loam is the most suitable soil for annuals, and it should be deeply dug and a moderate application of manure be given. Make the surface of the ground fine, and sow the seeds in drills so that a dutch-hoe may be used between the rows when the seedlings appear. Small seeds only require to be barely covered, but an inch deep will suit most kinds.

Bamboos.—The present is a suitable time for planting Bamboos. Choose a sheltered position for them where the plants will have the advantage of a background of other trees or shrubs. They will grow in sunshine or partial shade of trees, and by the side of water. Afford them a rich compost, or a plentiful supply of potting bench refuse will suit them admirably. If the plants are in pots turn them out carefully, and do not attempt to disentangle the roots, for they are brittle. After the planting has been done, afford a liberal mulch of manure, and apply water when this becomes necessary. Bamboos can be successfully transplanted at this season. If the "ball" of a plant that is being moved is of large size, it may be easily got out of the hole by tilting it carefully on one side, then placing a stout board under, and on this a transplanting fork; then let the weight of the soil fall on to the fork. A push and pull will send the ball up the board to the surface, when it can be trailed to the new station, unless it is some distance away. Our fork has twenty prongs, and there is a good bend on them. If the plant has to be conveyed for a considerable distance, put it on the removing carriage. Some Bamboos may be divided now, but keep as much soil as possible to the clumps. Remove the winter coverings from established plants, and afford them a liberal top-dressing of cow-manure. The following Bamboos are hardy, and make good growth:—Arundinaria japonica, A. Simoni, Phyllostachys kumasasa, P. aurea, P. Henonis, P. nigra-Boryana, P. Quilioi var. Castillonis, and P. viridi-glaucescens.

Paths.—Now that most of the rough work has been done the paths will require attention. Edge the grass, and level the paths, then apply fresh gravel and roll it well. Take advantage of fine days to kill the weeds.

Fernery.—Ferns require good drainage and a considerable depth of soil, consisting of loam, peat, and crushed stones. They should be cultivated in a shady glen, sheltered from prevailing winds. In addition to the well-known kinds, Struthiopteris germanica and S. pennsylvanica are effective. The young foliage of the plant last mentioned is tender and needs protection.

A BRANCHING PALM.—In the *Proceedings of the Agri-Horticultural Society of Madras* for September, 1904, is a figure of a Palmyra Palm (Borassus flabelliformis) with "twelve fully-developed heads and twenty-eight "blind" branches which are at first curved downwards but afterwards turn upwards." No reason for this appearance is suggested, though occasionally the injury caused by the grub of some beetle is responsible for the outgrowths.

"FARM AND HOME YEAR BOOK FOR 1905."—This is an "annual" intended expressly for the use of farmers. In addition to an Almanack it contains a variety of articles of special interest to agriculturists, and the dry details of business are enlivened by ten pages devoted to "humours" of the country. There are numerous illustrations, a table of contents, and a complete index. It is published at the office of *Farm and Home*, 17, Furnival Street, Holborn, E.C.

APPOINTMENTS FOR MAY.

MONDAY,	May 1	Bank Holiday (Scotland).
THURSDAY,	May 4	Linnean Society, meeting.
FRIDAY,	May 5	Royal Botanic Society, Lecture at 4 P.M..
SATURDAY,	May 6	Société Française d'Horticulture de Londres, meeting.
TUESDAY,	May 9	Royal Horticultural Society's Committees meet. National Rose Society's Committee meets.
THURSDAY,	May 11	Royal Gardeners' Orphan Fund, Annual Dinner at Hotel Cecil.
FRIDAY,	May 12	Royal Botanic Society, Lecture.
WEDNESDAY,	May 17	Royal Botanic Society's Show at Regent's Park. Devon County Agricultural Society's Show at Exeter (3 days).
FRIDAY,	May 19	Royal Botanic Society, Lecture, 4 P.M.
SATURDAY,	May 20	Paris International Horticultural Exhibition (9 days).
TUESDAY,	May 23	Royal Horticultural Society's Committees Meet. and National Tulip Society's Show combined.
WEDNESDAY,	May 24	Linnean Society, Anniversary Meeting. Royal Caledonian Horticultural Society's Spring Flower Show at Edinburgh (2 days).
FRIDAY,	May 26	Royal Botanic Society, Lecture and Meeting of Fellows.
MONDAY,	May 27	Annual Dinner of the Members of the Kew Guild at Holborn Restaurant.
TUESDAY,	May 30	Royal Horticultural Society's Show in the Temple Gardens, Thames Embankment, London (3 days). Bath and Western and Southern Counties Society's Show at Nottingham (5 days).

SALES FOR THE WEEK.

TUESDAY and WEDNESDAY NEXT—
The "Bank House" Collection of Orchids. Important three days' sale of the entire collection of Cattleyas, also duplicate plants of Odontoglossums and Cypripediums, at Bank House, Accrington, near Manchester, by Protheroe & Morris, at 12.30 o'clock.

WEDNESDAY NEXT—
Palms, Plants, Hardy Border and Herbaceous Plants and Perennials, Carnations, Liliums, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.—Palms, Azaleas, Gladioli, Lilies, &c., at Stevens's Rooms, King Street, Covent Garden, at 12.30.

FRIDAY NEXT—
Imported and Established Orchids in large variety, from various sources, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

(*For further particulars see our Advertisement columns.*)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —51·5°.

Actual Temperatures :—
London. — *Wednesday, April* 26 (6 P.M.): Max. 58°; Min. 49°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, April* 27 (10 A.M.): Bar., 30·0; Temp., 55°. Weather dull and calm.
Provinces.—*Wednesday, April* 26 (6 P.M.): Max. 53°, Guildford; Min. 45°, E. coast of Scotland.

Deterioration of Asexual Varieties.

The discussion at the Scientific Committee of the Royal Horticultural Society has elicited a great deal of interesting information, especially with regard to the Potato, but it can hardly be said to have led to any decisive result. Nor, indeed, was it expected to do so. As a means of obtaining the opinion of practical growers it has been of great value, and it has shown that no general rule can be laid down until the matter has been deliberately tested by comparative experiment extending over a series of years. This is another instance of the kind of work that might be done at Wisley. But already the proposals made as to what should be done at that establishment are such that a lifetime would not be too much to carry them out, nor would a brigade of observers and experimenters be too numerous to accomplish them!

We have already summarised the main points that were laid down for the discussion on the alleged deterioration of variations propagated asexually (see p. 200), and need only for the moment refer to two points on which some misapprehension may arise. (1) It has been affirmed that when the Potato is propagated by tubers or sets, the produce does not consist of new individuals, but only of sub-divisions of the old one—that all the plants of Eldorado or of any other variety, for instance, are mere offsets from the original tuber or tubers. If we suppose the variety to have been raised from one original tuber, naturally the amount of inherent variation would be less than if the variety had a multiple origin. No two tubers on the same haulm are alike, and thus we get from the beginning a source of variation. But if, for the sake of argument, we take it for granted that a Potato, or a plant of any kind, raised from a cutting *is* a mere repetition or extension of the original plant, we must also admit that there is still abundant scope for variation in this wise: A seed-tuber is planted, it grows not only in size, but it develops new shoots, new haulm, new foliage, perhaps new flowers, new fruits, and new seeds, not a trace of which was in the original tuber. When all this growth and development are completed at the end of the season, when the cycle of growth is terminated, and the conditions for further growth are no longer favourable, how much is there left of the old tuber? In fact, nothing is left but a new tuber or a new set of tubers, the result of the growth and development of an entirely new set of cells; and these new cells and the tubers formed from them, although the direct descendants from their predecessors, can hardly be considered, from this point of view, as portions of them; rather may it not be said that they have cast off their original dependence on their progenitor and assumed an independent existence? They may, it is true, carry with them some of the parental protoplasmic germs or attributes, but for all that they are independent organisms, with a life of their own, separate from that of the stock from which they proceeded.

The second point which has been raised is that of "old age." Individuals die of old age when the waste and the wear and tear of life are no longer compensated for by the processes of repair and rejuvenescence, and when in consequence the individual is no longer able to contend against opposing conditions; when it is, to use the expression of the day, no longer in harmony with the environment.

But is the variety or the species subject to the same law? That is the main point at issue. Inasmuch as species and varieties are mere aggregations of individuals, they must, it would seem, be subject to the same sequence of events—they must originate, develop, and ultimately decline. How long they may endure before their life cycle is complete must depend on circumstances, and over those circumstances the gardener has to a certain limited extent a control. His business is to find out for himself the amount of control he can exercise, and how he can best in the short time at his disposal utilise it for his own purposes. The letter which we publish from Mr. Arthur Sutton in another column will be read with all the attention that is due to a thoughtful observer with such exceptional opportunities and experience (see p. 258).

Sir Hugh Low.

Again we have the grave duty of recording the death of a gentleman well known in the horticultural world. Sir Hugh Low, G.C.M.G., whose death took place at Alassio on the 18th inst., had more than forty years' experience of colonial administration in the East Indies. He was born in 1824, and on May 10 would have completed his eighty-first year. He was created a K.C.M.G. in 1883 and promoted to a G.C.M.G. in 1889. He was a Fellow of the Linnean Society, the Zoological Society and the Society of Antiquaries.

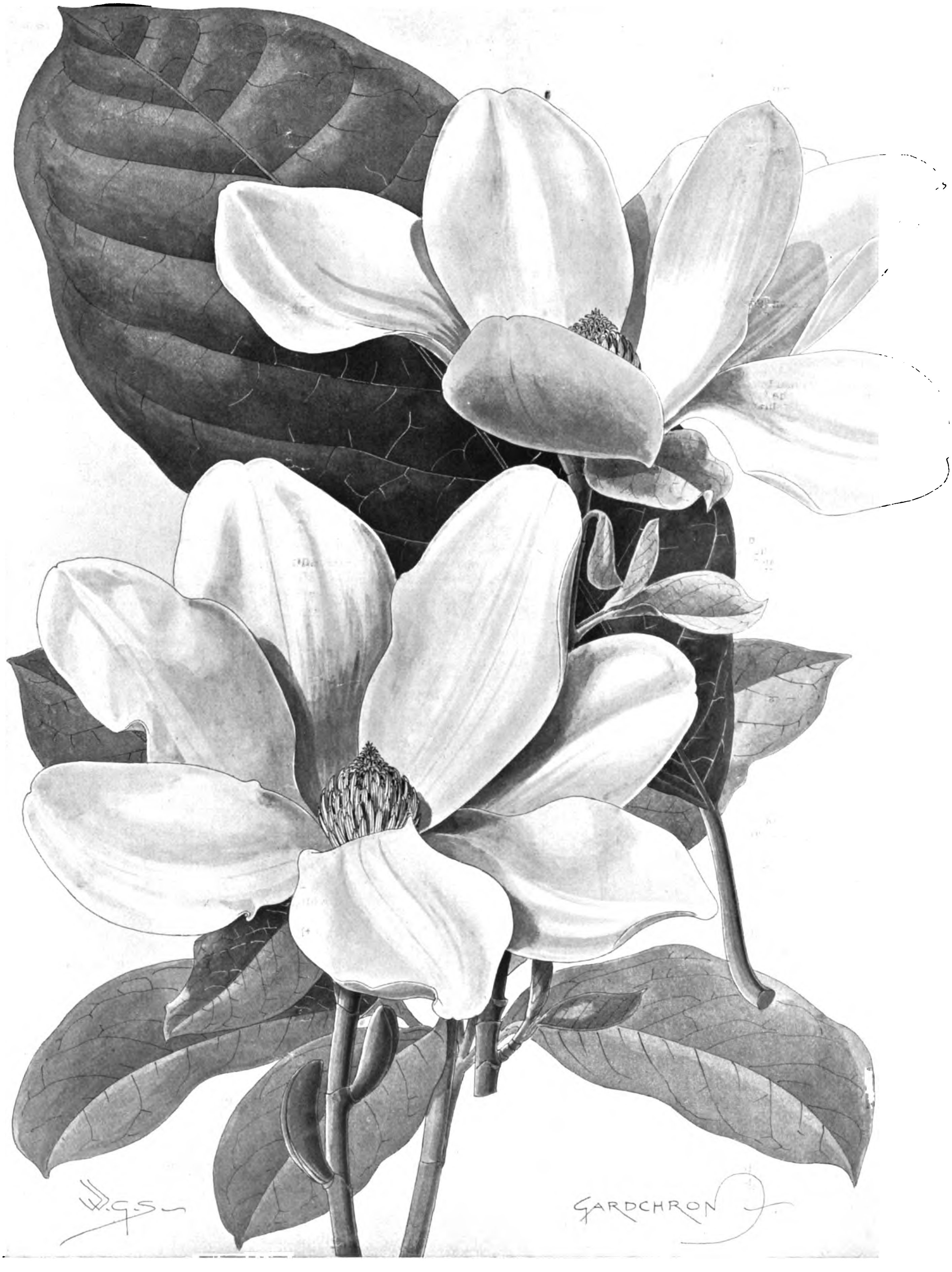
Some time about the year 1840 Mr. Low had obtained an appointment to the Hon. East Indian Company, but happening to go out on the same vessel with Mr., subsequently Sir James Brooke, who was then again on his way to Borneo, they became so attracted to each other that Mr. Low gave up his Indian appointment and joined the future Rajah as secretary and companion. Mr. Low spent nearly three years in Borneo and the vicinity on his first visit, and on returning to England he published, in 1848, a very interesting illustrated volume of three hundred and fifteen pages, *Sarawak: Its Inhabitants and Productions*, one of the first and best accounts given of a residency in the island under the rule of Rajah Brooke. In Sarawak he discovered such unique species of Orchids as Vanda Lowii, Cœlogyne pandurata, Cypripedium Lowii, and many other rare plants. To have discovered such a regal Orchid as Vanda (Arachnanthe) Lowii and the great mountain pitcher-plants of Borneo would alone suffice to give Sir Hugh Low worldwide fame as a botanist.

When Mr. Brooke was made Acting Governor of Labuan in 1848 Mr. Low accompanied him, and eventually became Colonial Treasurer of the island. He loved the Borneans and their beautiful country, in which he was destined to spend so many years of a useful life.

Mr. Low's love for natural history was a broad one. Not alone did he collect plants both living and dried, but also animals, birds, reptiles, fish, and insects, many of which were new and rare. Coming as he did from a fine old horticultural stock—the "Lows of Clapton"—it is not surprising that he possessed a keen eye and ardent desire for botanical things.

When Colonial Treasurer in the then new British colony on the island of Labuan, he made one or more trips to the Lawas and other rivers near the capital city of Brunei on the main island, where he found Dendrobium Lowii and Nepenthes of several kinds, including the remarkable N. bicalcarata. Mr. Low, in 1851, made the first attempt to ascend Mount Kina Balu, accompanied by natives only, and the results of the journey were very remarkable from a botanical point of view. On the rocky sides of this great mountain, at a height of from between 5,000 and 10,000 feet (the total altitude being 13,700 ft.), he found the great urned Nepenthes, never before seen or imagined in dreams. These included N. Rajah, N. Edwardsiana, N. villosa, and N. Lowii, figures and descriptions of which were published in *Linnean Society's Transactions*, vol. xxii., by Sir Joseph Hooker.

In 1851 Mr. Lobb, a well-known Veitchian traveller and collector, had reached Kian, a



MAGNOLIA KOBUS, A DECIDUOUS SPECIES FROM JAPAN—FLOWERS WHITE; SLIGHTLY ENLARGED.

village at the foot of the great mountain, but was not allowed by the natives to ascend. Again, in 1858, Mr. Low, accompanied by Mr. (now Sir) Spencer St. John, again ascended Kina Balu, and a full account of this journey, with maps and coloured plates (after Hooker) of the great Nepenthes already named are given in St. John's *Life in the Forests of the Far East*, a work well known to Bornean travellers.

Apart from Nepenthes, however, other beautiful plants were discovered on Kina Balu, including rare Orchids, and some remarkable Rhododendrons—R. ericoides, with scarlet flowers on a scrambling Heath-like bush; R. stenophyllum, with larger waxy red bells in lax clusters on a plant singularly like the Sciadopitys, or Umbrella Pine of Japan; R Brookeanum, with enormous clusters of rich golden-orange flowers, on plants resembling the large-leaved Himalayan kinds; R. Lowianum, and several others, dried specimens of which exist at Kew. Even to this day Low's name is revered by the Europeans and natives alike who knew him in Labuan, Borneo, and in Perak, to which province he succeeded Mr. Birch, H.M. Resident, who was murdered there under very distressing circumstances about thirty years ago.

Sir Hugh Low's personality was a charming one, his knowledge of the Malay language, both written and spoken, was great, and, like every born traveller, explorer, or ruler, he had keen sympathy with the natives, their laws and their customs. When I was in Borneo in 1877—78, the mountain people at Kian were most enthusiastic when my guides told them I was a friend of "Tuan Il Low," the native name by which he was there so well known. *F. W. B.*

Magnolia Kobus (see Supplementary Illustration).—The Magnolias furnish us with some of our most beautiful spring-flowering shrubs. The one we now figure resembles M. stellata (illustrated in our issue for April 27, 1895, p. 521), but has fewer and broader petals, and the leaves are broadly obovate-oblong, acute, instead of being simply oblong. M. Kobus has been shown lately at various exhibitions by Messrs. R. Veitch & Son, of Exeter, to whom we are indebted for the specimen from which Mr. Worthington Smith's drawing was taken. Messrs. Robert Veitch tell us that it is a very fast-growing shrub, small plants introduced seven or eight years ago being now 12 to 14 feet high in spite of having been transplanted two or three times. All the Magnolias of this section have bloomed earlier than usual this season. The species is of Japanese origin, as is probably the specific name, the meaning of which we do not know. The following extract relating to this tree is taken from Sargent's *Forest Flora of Japan* :—

> "In the forests of Hokkaido a second species, Magnolia Kobus,* occurs. This tree sometimes grows in the neighbourhood of Sapporo to the height of 70 or 80 feet, and develops a tall, straight trunk, nearly 2 feet in diameter, covered with rather dark, slightly furrowed bark. The branches are short and slender, and form a narrow pyramidal head, which only becomes round-topped when the tree has attained its full size. The branchlets are more slender than those of most species of Magnolia, and are covered with dark reddish-brown bark. The flowers appear near Sapporo in the middle of May, before the leaves, from acute buds an inch long, half an inch broad, and protected by long, thickly-matted, pale hairs. They are from 4 to 5 inches across when fully expanded, with small acute caducous sepals, and narrow, obovate, thin, creamy-white petals. The stamens, with short broad filaments, are much shorter than the narrow acute cone of pistils. The leaves are obovate, gradually narrowed below, and abruptly contracted at the apex into short broad points; they are pubescent on the lower surface at first, especially on the stout midribs and primary veins, but at maturity are glabrous or nearly so, and are bluish-green, and rather lighter coloured on the lower than on the upper surface; they are 6 or 7 inches long, 3 or 4 inches broad, rather conspicuously reticulate-veined, and are borne on stout petioles ½ to 1½ inch in length. The fruit is slender, 4 or 5 inches long, and is often contorted or curved from the abortion of some of the seeds; it is dark brown, the carpels being conspicuously marked with pale dots.
>
> Magnolia Kobus is exceedingly common in the forests which clothe the hills in the neighbourhood of Sapporo, where it grows to a larger size than in any part of Japan which I visited: near the shores of Volcano Bay it occurs in low swampy ground and in the neighbourhood of streams, in situations very similar to those selected by Magnolia glauca in the United States. On the main island Magnolia Kobus is much less common than it is in Hakkaido, and I only met with it occasionally on the Hakone and Nikko Mountains at considerable elevations above the sea. This handsome tree was introduced into the United States by Mr. Thomas Hogg, and was distributed from the Parsons' Nurseries as Magnolia Thurberi, under the belief that it was an undescribed species. In cultivation it does not flower freely in the young state, although trees in Pennsylvania and in the Arnold Arboretum, where it was raised from seed sent from Sapporo fifteen years ago, have produced a few flowers. In New England, Magnolia Kobus is the hardiest, most vigorous, and most rapid-growing of all Magnolias."

The Vilmorin Memorial.—We have on more than one occasion alluded to the very numerous adhesions to the proposal to erect a monument to the late Henry de Vilmorin. At a recent meeting of the Committee in Paris, a model executed by M. Carlier was unanimously approved, and the sculptor requested to proceed with the work. The monument consists of a group symbolising Agriculture and Horticulture, and three children, one winnowing the Wheat, another uprooting a Beetroot, the third holding a garland of flowers. In this way the idea of the Committee in issuing its appeal for subscriptions is carried out. "Without the Vilmorins there would probably be less Wheat in our fields, certainly less sugar in our Beetroots, and surely fewer flowers in our gardens." On the pedestal supporting the group are four medallions representing four generations of the Vilmorin family.

Mushroom Disease.—We very frequently receive specimens of diseased Mushrooms with a request that some remedy may be suggested. The disease is caused by a parasitic mould, probably introduced with the manure. An illustrated article on the subject is given in the last number of the *Journal of the Board of Agriculture*. There seems to be no cure. The houses should be cleared out and thoroughly sprayed with a solution of copper sulphate, using 1 lb. of sulphate to 15 gallons of water. This should be done three times in ten days.

Cypripedium Fairieanum.—The missing Orchid has been re-discovered in the country where its re-discovery was expected. It is to be hoped that now that it has been re-introduced Orchid-growers will be more fortunate in its cultivation than formerly. It was at one time not uncommon, and was figured in the *Botanical Magazine*, t. 5024, and in the *Flore des Serres*, t. 1241. One small specimen remains in Sir Trevor Lawrence's collection, and there are a few similar ones in Paris, but with these exceptions the plant has been lost to cultivation, though it is represented by a numerous hybrid progeny. The reported rediscovery of Cypripedium Fairieanum in the Eastern Himalaya has, we learn, been placed beyond doubt by the arrival at Kew of two fine plants, one with twelve, the other with seven "leads," and in as perfect health as if they had been there for months. The exact locality of this most interesting find has not been divulged, but as the Eastern Himalaya includes Bhootan and Assam, we may conclude that the now famous sale at Stevens' Auction Rooms some fifty years ago of a "collection of East Indian Orchids sent from Assam" did actually include this Cypripedium, and indicated its habitat. Many attempts have since been made to find it, the country between the Brahmaputra and the Irrawady rivers having been systematically searched by Orchid collectors, such as Boxall, Fosterman, Gibson, Giesseliere, and Barton Groves; and by botanists, including Sir Joseph Hooker, Dr. Thomson, Mr. C. B. Clarke, Sir Henry Collett, Sir George Watt, and others, but none of them found C. Fairieanum. Van Houtte said he received it from Bhootan, and Captain Tronson's plant is labelled as from Assam. We shall be glad to learn from the successful collector whether the plant grows at a high elevation or, as we have hitherto believed, in the lowlands. The Kew examples might be taken for C. insigne did they not bear the unmistakable slender hairy scape, which by the way is a foot long, the ovate bract, and purple ovary of C. Fairieanum.

Mr. G. H. Weigt, of the Royal Gardens, Kew, has been appointed Curator of the Botanic Garden, Sao Paulo, and Superintendent of the Government trial stations at Estado Sao Paulo, Brazil. He will commence his duties in June.

Cucumber Spot.—Mr. A. D. Hall, writing in the *Journal of the Board of Agriculture*, reports unfavourably of the treatment recommended by Mr. Massee, which seems to be only partially successful. Mr. Hall suggests that experiments should be made with a view of raising a disease-proof variety. Those who may experiment with carbolic acid for the prevention or cure of this fungoid disease, may be reminded that extreme care should be exercised in its use. We have already heard from some readers whose plants have suffered a little injury to the foliage from this cause. Plants grown with little ventilation, and young plants are of course most easily injured.

Flowers in Season.—We have received a selection of Pansy and Viola flowers from Messrs. Dobbie & Co., Rothesay, N.B., of such varieties as were exhibited by them at the meeting of the Royal Horticultural Society on April 11. Many of our readers will remember the excellent forms of these old-fashioned flowers put up on that occasion by this firm, who evidently possess an excellent strain.

—— Mr. J. Crooke, Forde Abbey Gardens Chard, recently sent us a selection of umbellate Primroses remarkable for the size of the bloom, each measuring on the average 1¾ inch (35 mm.) in diameter, and specially for their rich and varied colouration. The strain is evidently one of great excellence.

Popular Daffodils.—At the exhibition of the Midland Daffodil Society, of which a report was published in our last issue, there was an interesting ballot for the purpose of finding out which were the most popular varieties with the general public. Fifty varieties of Daffodils under numbers instead of names were set up on a table in a prominent position. Visitors to the exhibition were asked to mark on a card the twelve varieties which in their opinion were the best. Subjoined are the names of the varieties staged, and the number of votes each variety received. Altogether there were 242 who voted :—

Madame de Graaff, 157; Gloria Mundi, 142; Crown Prince, 139; Emperor, 128; C. J. Backhouse, 122; Katherine Spurrell, 121; Barri conspicuus, 108; Glory of Leiden, 100: Ornatus, 100; Duchess of Westminster, 94; Flora Wilson, 89; Sensation, 80; Sir Watkin, 80; Madame Plemp, 79; Titan, 77; Mrs. Langtry, 72; Palmerston, 62; M. J. Berkeley, 55; Duchess of Westminster, 57; Falstaff, 52; Horsfieldi, 48; Golden Ball, 49; Lulworth, 47; Princess Mary, 41; Autocrat, 41; Beauty, 41; Campernelle Jonquils, 40; J. B. M. Camm, 38; Incomparabilis plenus, 38; Stella, 38; Orange Phœnix, 34; Whitwell (Seedling), 34; P. R. Barr, 34; Grand Duchess, 34; Maurice Vilmorin, 33; M. M. de Graaff, 29; Semi-partitus, 29; Seedling (unknown),

---

* *Magnolia Kobus*, De Candolle, *Syst.* I., 456.—Miquel, *Prolus. Flor. Jap.* 146.—Maximowicz, *Melang. Biolog.* viii. 507.—Franchet & Savatier, *Enum. Pl. Jap.* i., 16.

Magnolia tomentosa, Thunberg, *Trans. Linn. Soc.* ii., 336 (in part).

Magnolia glauca var. a, Thunberg, *Fl. Jap.* 236.—Kobus, Kæmpfer, *Icon. Select.*, t. 42.

23; W. Goldring, 22; Cynosure, 21; Nelsoni major, 21; Frank Miles, 19; Portia, 18; Princess Mary, 18; Orphee, 14; Princeps, 14; Mary, 13; Hogarth, 9; Baroness Heath, 9; Queen Bess, 6.

HODSOCK PRIORY GARDENS.—Through the kindness of Col. MELLISH the well-known gardens at Hodsock Priory were thrown open to the public on Easter Monday. A small charge was made for admission, and a sum of about £10 was thus raised for the benefit of the Gardeners' Royal Benevolent Institution. Mr. MALLENDER, the head gardener, is not only a consistent worker for the Institution, but a well-known grower and raiser of Daffodils. These and many other flowers were exceedingly attractive.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

DENDROBIUM WARDIANUM.—Mr. Higgie is quite right in his remarks on the treatment of Dendrobium Wardianum. It ought never to be placed in anything but a quite cool greenhouse, whether summer or winter. Its habit is peculiar, because the young shoots for next year begin to grow in the autumn almost before it loses its leaves. These continue to grow all through the winter in a cold-house which is only just kept above freezing-point. They are now from 6 to 10 inches high, perfectly healthy, the flowers with which the old pseudo-bulbs have been as crowded as possible for the last six weeks being now nearly over. It is quite wrong to grow this plant in a hot-house. It makes long, weakly shoots there, and ultimately dies. *C. W. Strickland, Hildenley, Malton.*

ROSA SORBIFLORA, FOCKE.—There appeared in the *Gardeners' Chronicle* in vol i., 1905, p. 227, a description by Dr. Focke of a Chinese Rose under the name of Rosa sorbiflora, an illustration of which was also given. The description was drawn up from specimens collected by Mr. E. H. Wilson (No. 828) in Central China. The specimens in the Kew herbarium under the same number, after careful examination, cannot be specifically distinguished from R. microcarpa, Lindley, a common Chinese Rose, and of which there is at Kew abundant material collected over a wide area. Judging from Dr. Focke's remarks on the limitations of the group Banksianæ, one would almost be inclined to supposed that he had inadvertently overlooked the existence of R. microcarpa as a member of that group. I may mention that Mr. Hemsley agrees with me in regarding R. sorbiflora and R. microcarpa as identical. *J. F. Duthie, Herbarium, Kew.*

DISCOVERY POTATO.—Stored under similar conditions for planting purposes, I have found this fine variety to be the most restful of all the twenty I have, although those include Eldorado, Northern Star, Up-to-date, Evergood, Duchess of Cornwall, Empress Queen, Lord Dundonald, and other fine varieties. That is a matter of considerable moment to those who wish to have really good edible tubers late into the spring. The winter, having been so mild and open, has been a rather trying one for Potatos, as they have felt its influence and pushed growth, though stored under the most favourable conditions. When at this late period of the spring (April 7) tubers of Discovery, although grown on warm Surrey sand at Englefield Green, are found not to have started growth at all, conclusive evidence is furnished that it is a first-rate keeper. When the recent cooking test of Potatos took place at Marks Tey it was found that Discovery from Essex soil obtained ten marks. That was very high praise indeed for a late Potato. *A. D.*

WEATHER IN WARWICKSHIRE.—Until to-day the weather during this month has been miserably cold. We have had no frosts to do harm, but there have been continuous north, north-east and east winds, with occasional showers of hail and sleet, but not very much rain. Plum blossom is strong and abundant, and if frosts will only keep away there is every promise of a heavy crop. Some varieties of Pears are in full and profuse flower, and also, in absence of frosts, there will be some Pears. Apple trees, which bore so liberally last year, show less bloom this year, but taking them altogether they are very promising. During many consecutive days of cold weather bees were unable to come out, we therefore, according to instructions from our local bee expert, gave them some food within their hives; but we have to-day a decided change for the better. The wind has veered round to the south-west, bringing with it much warmer weather; bees are about and birds are in joyful song, and all vegetation appears to have already assumed a more encouraging appearance. The season so far has been a splendid one for farmers and gardeners, enabling them to get well forward with their ploughings, digging, sowings, and plantings. *W. Miller, Berkswell, April 24.*

PHŒNIX ROBELINI.—In all our gardens in the South of France there is, so far as I know, but one specimen of this Phœnix. This is at Mentone, in the garden of the villa belonging to the late Mr. Kennedy. This Palm, which, according to a note in the *Revue Horticole*, 1891, p. 783, came originally from Siam, but has withstood 7° below zero (Centigrade), being only sheltered by the foliage of a very large Cocos botryophora. *B. Chabaud, 7, Place de la Liberté, Toulon.*

AURICULAS.—A show of Auriculas with other allied spring flowers may be considered in a sense to be unique, inasmuch as it can be produced but once in a year. For many years past the Royal Horticultural Society has fostered the little Society devoted to these plants by awarding grants of money and tickets, and also space in its Hall for its exhibitors, so that the growers of the beautiful and fascinating Auricula and kindred spring flowers have been enabled to give the public a yearly exhibit of the products of spring, which under ordinary conditions it would have been beyond the power of this struggling little Society to give. The Auricula Society ought to be more largely patronised and in a more flourishing position than it is, as its members work valiantly to display an annual show of unequalled excellence and beauty. All the offices in connection with the Society are honorary, and its income is practically absorbed by its numerous and deserving prize-winners. Last year terminated the periodical exhibition of the Auricula at the Drill Hall, Buckingham Gate, which was for some years the location of the Royal Horticultural Society. The space was not adequate to enable the members and public to have a fair view of the exhibits of the conjoined shows without inconvenience from overcrowding. But in the beautiful and commodious new hall recently erected and opened by the Royal Horticultural Society in Vincent Square, Westminster, there is sufficient space for exhibitors all round. A regrettable feature in relation to the Auricula is the small number of its growers as compared to their numbers in the years that are gone. Our ancestors discovered its value and possibilities, and therefore removed it from its natural habitat and put it under new conditions, and by cross-fertilization they and their successors have wonderfully enriched it. The endless variety of seedlings which are produced every year, with very rare exceptions, would not, from a technical point of view, be worth perpetuating, and therefore when any new seedlings worthy to attract the judges' eyes are exhibited they are welcomed with delight, and their careers afterwards in regard to development and increase are closely followed, as all advents of accepted varieties are urgently wanted to fill the vacancies which are caused by the withdrawal of plants which shall have played out their part on the floral stage. At last year's show it was gratifying to observe the special efforts made by some of our most successful growers, several of whom brought forward some very promising seedlings. Many growers are afraid of distressing their plants by allowing the offsets to remain long attached to their parent, but it should be noted that as offsets are typical of plants which cannot exist for ever, it is necessary that to obtain robust progeny they should not be excised until they are well rooted and of healthy form, so as to secure as long a life as possible to all the best types which are so rarely reproduced from seed—in some cases never. The Auricula has several malignant enemies, one of which is the pubescent aphis (Trama Auriculæ), a very diminutive insect of subterranean habit which lives entirely on the delicate root-fibres of every plant it attacks, and sucks therefrom, like a leech, every particle of the life-moisture provided by Nature for the sustenance of the plant, leaving it in a deplorably emaciated condition. Numerous suggestions and nostrums have been recommended for its destruction, but have ended in negative results. Its extirpation can only be accomplished by turning the plants visited by it out of their pots, and removing every portion of the soil affected. To amateurs of limited leisure who have but small and shaded gardens, the cultivation of the show and also the alpine Auricula should have a special attraction. *S. I. Culpeck, 63, Knighton Park Road, Sydenham.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

APRIL 25.—Notwithstanding that the meeting on Tuesday last was held on a day which followed immediately upon a general holiday, the new Hall in Vincent Square, Westminster, was well filled with exhibits. The National Auricula Society's show was held in conjunction with this meeting, and the visitors to the Hall included a considerable number who are specially interested in the cultivation of that flower.

Orchids were shown in several good groups, and the ORCHID COMMITTEE recommended four First-class Certificates, one Award of Merit, and one Botanical Certificate to new varieties.

The FLORAL COMMITTEE's chief award was that of a First-class Certificate to the new Meconopsis integrifolia from Western China and Thibet, which, upon flowering in this country, has proved to be fully as handsome as it was described to be in our issue for October 1 last year, when it formed the subject of a Supplementary Illustration. A Botanical Certificate was also awarded to this plant by the Scientific Committee. Awards of Merit were recommended to Cyrtanthus angustifolius grandiflorus and Tree-Carnation "Elizabeth." The same Committee recommended as many as nineteen Medals for groups of plants or flowers exhibited.

The FRUIT AND VEGETABLE COMMITTEE had but one item for consideration, and this consisted of tubers of "The Factor" Potato, which, having been awarded already an Award of Merit, was recommended a First-class Certificate.

The NARCISSUS COMMITTEE made six Awards to forms of Narcissus, and two to Tulips.

At the General Meeting held in the afternoon upwards of sixty new Fellows were elected, and a LECTURE by Mr. James Hudson on "The Japanese Garden at Gunnersbury House, Acton," was read by the Rev. W. Wilks, M.A. The lecture was illustrated with lantern views.

Floral Committee.

Present: W. Marshall, Esq., Chairman, and Messrs. C. T. Druery, C. E. Pearson, Geo. Nicholson, R. Wilson-Ker, R. C. Notcutt, C. J. Salter, W. Howe, Jno. Jennings, C. Dixon, Chas. Jeffries, W. Cuthbertson, W. P. Thomson, H. J. Cutbush, E. H. Jenkins, Geo. Paul and R. Hooper Pearson.

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited H.-T. Rose Gustave Grunerwald, of rich pink or rose colour, and also a very fine H.-T. Rose named Madame Paul Olivier, a very full flower, whitish with tints of orange-yellow and pink colours. The Committee expressed a desire to see the variety again as plants.

Lord ALDENHAM, Aldenham House, Elstree (gr., Mr. Beckett), displayed a comprehensive exhibit of cut sprays of flowering trees and shrubs. Most of the subjects were from the open, but there were Azalea mollis, Deutzia gracilis, Lilacs, &c. The exhibit was demonstrative of the numbers of hardy flowering trees and shrubs available for planting. Among others noticed were Phillyrea Vilmoriana, Daphne pontica, Pyrus salicifolia pendula, Berberis aquifolium, Ribes pumilum aureum, Myrica Gale, Ribes Gordonianum, Cercidiphyllum japonicum, Xanthorhiza apiifolia, and Veronica Hulkeana (Silver-gilt Banksian Medal).

Messrs. J. CHEAL & SONS, Lowfield Nurseries, Crawley, staged a number of hardy flowering shrubs, all of which had been growing in the open borders. Among these we noticed Magnolias, Spiræas, Erica mediterranea, Berberis Darwini, Pyrus Malus in several varieties, Cerasus sinensis, &c.

Flowers of Iris tingitana, a Tangerian species of rather shy-flowering habit, were shown from the Society's gardens at Wisley.

A basket containing Ranunculus asiaticus, grown from plants collected in the Holy Land between Jerusalem and Bethlehem, was displayed by Mr. Arthur W. Sutton, Reading.

A Pansy named Frank Mills, also shown by Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, having very large flowers of good form, and the ground-colour of rich brown edged with golden-yellow, would be very effective for bedding. The markings and "eye" are not quite in accordance with the florist's view of what an exhibition Pansy should be.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, showed well-flowered plants of Schizanthus wisetonensis, a batch of the dwarf-growing yellow Calla, pans containing a good blue-flowered Lobelia named Low's Triumph, choice Carnation flowers, and a splendid specimen of Amaryllis procera Impératrice de Brésil. This plant carried four flowers of a pale blue almost heliotrope colour, with petals nearly covered with tiny blue dots. A handsome and highly decorative plant (Bronze Flora Medal).

Messrs. Jas. Veitch & Sons, Ltd., King's Road, Chelsea, set up a semi-circular group of plants. There were the two new Chinese plants, Actinidia chinensis and the beautiful Meconopsis integrifolia, several species of Acer, A. japonicum laciniatum (in flower), A. palmatum dissectum, &c. An edging was furnished by plants of Rhododendron racemosum, and the pleasing dwarf Ghent Azalea, "Taylor's Red." Messrs. Veitch also displayed a number of flowering greenhouse plants, showing many interesting subjects. Medinilla magnifica grandiflora was shown in flower, the brilliant inflorescence contrasting well with the dark-green foliage. Rhododendron Williamsii has a pleasing head of pure white flowers that are lightly maculated with yellow on the posterior petal. A batch of Kalanchoe felthamensis was shown in good character.

Messrs. Richard Smith & Co., Worcester, showed a collection of greenhouse plants, prominent among which were a number of pot plants of Clematis. Such things as Maples, Boronias, Solanums, Hippeastrums (Amaryllis), Phyllocactus, Genista præcox and Deutzia gracilis carminea were interspersed in the group to the best advantage and enhanced the effect produced by the plants of Clematis. Of the latter there were such varieties as Nellie Moser (excellent), Miss Bateman, Edouard Desposse, The Queen, &c. (Silver Banksian Medal). The same firm also showed a large plant under the name Phlebodium Smithianum, and described as a supposed cross between P. aureum and P. sporodocarpum. The fronds were divided more narrowly than those of P. aureum.

Messrs. Gilbert & Son, Dyke, Bourne, Lincolnshire, showed Anemones even better than those of their previous displays this season, and certainly more extensively. The variety King of Scarlets well deserves its name, while those of the St. Brigid type embrace the most exquisite forms of the double A. coronaria. A. fulgens var. græca oculata has a refined scarlet flower, and was well shown in this collection; Queen of the Roses is a double flower (Bronze Flora Medal).

Messrs. John Laing & Sons, Forest Hill, London, showed a batch of Streptocarpus of an improved type, some of the plants having rich purple-coloured flowers.

Messrs. Watkins & Simpson, Tavistock Street, Covent Garden, showed many varieties and forms of the common Wallflower. Golden King is an excellent yellow form; Rupert has large dark crimson flowers; Vulcan is very similar to the last-named; Eastern Queen is a light-coloured form, while Ruby Gem approximates to the colour indicated by its name.

Messrs. H. Cannell & Sons, Swanley, Kent, again showed vases of brilliant bunches of zonal Pelargoniums in the best and choicest varieties (Silver Flora Medal).

Messrs. Dobbie & Co., Rothesay, N.B., staged a collection of Pansy and Viola flowers similar to that displayed by them at the last meeting. The Violas were especially showy, the colours being excellent. Pansies of large size and good shape were displayed on boards (Silver Banksian Medal).

Mr. C. Engelmann, Saffron Walden, Essex, contributed a number of vases containing Sweet Peas cut from plants growing in borders inside. They were shown in excellent condition, and embraced many of the choicest varieties of these highly-refined flowers. In addition to the display of lovely colours, the exquisite perfume was much appreciated. The varieties Hon. Mrs. Kenyon, Mars, and Dorothy Eckford were especially good (Bronze Flora Medal).

Messrs. J. Carter & Co., 237, 238, and 97, High Holborn, London, W.C., exhibited an extensive collection of pigmy Japanese trees in the native pots, which were in many cases as curious as the plants themselves (Silver Banksian Medal).

Messrs. B. R. Cant & Sons, The Old Rose Gardens, Colchester, brought a small exhibit of pot Roses, and cut flowers of the same. The new climbing Rose Blush Rambler was presented in good form, also that lovely single-flowered "Austrian Yellow," whose flowers are of the purest yellow colour (Silver Banksian Medal).

Messrs. Frank Cant & Co., Braiswick Rose Gardens, Colchester, showed some boxes of excellent cut Roses, also vases containing sprays of the variety "Fortune's Yellow." A box contained the variety Souvenir de Pierre Notting in first-class condition (Silver Flora Medal).

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, staged a group of pot Roses of the Rambler type, arranging the plants on the floor of the hall. Interspersed among the Roses were greenhouse plants, including Statice profusa, Astilbe (Spiræa) japonica, and a number of choice varieties of Ferns (Silver Flora Medal).

Mr. W. Taylor, Hampton, Middlesex, staged a small collection of Roses, which contained some exquisite examples. A vase of the variety Captain Haywood was almost perfection (Silver Banksian Medal).

Twelve vases of excellent flowers of Rose Fortune's Yellow were shown by Lady Wantage, Lockinge Hall, Wantage (gr., Mr. W. Fyfe).

J. A. Young, Esq., Stone House, Putney (gr., Mr. G. H. Street), put up a fine group of Cinerarias, chiefly of the stellata type. The plants were excellently flowered, and made a bright display (Silver Flora Medal).

Messrs. John Laing & Sons, Forest Hill, London, N., furnished one of the ends of the south annexe with a group of Cinerarias, arranging them so as to slope from a higher background toward the front. The plants were all of the lax-growing stellata kind, and the inflorescences carried a profusion of flowers in many excellent shades of colour. A number of pot plants of Ferns and Palms were worked into the group with excellent effect (Silver Banksian Medal).

Mr. L. R. Russell, Richmond Nurseries, Richmond, Surrey, showed a group of flowering shrubs and other plants. Clematis, Azaleas, Gueldres Roses, Cytisus, Lilacs, &c (Silver Banksian Medal).

Messrs. Wm. Cutbush & Son, Highgate, London, N., showed a collection of Primulas. Over 200 species and varieties were included, the whole forming an exhibit of educational interest to lovers of hardy plants. A number of other plants, such as Liliums, Maples, Pæonies, Spiræas, &c., formed a background. Messrs. Cutbush also showed a new dwarf polyantha Rose named Mrs. William H. Cutbush, and a new Rambler Rose named Mr. F. W. Flight. The latter has pleasing semi-double flowers of a light rosy-pink colour.

Mr. A. R. Upton, The Guildford Hardy Plant Nursery, Guildford, showed a number of seedling Saxifrages. The one labelled S. Guildford Seedling is of a pleasing crimson colour.

Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester, set up a group of hardy plants, arranging vases of Daffodils and Japanese Maples toward the background. Plants of Gentiana verna were well furnished with the exquisite blue flowers; Arnebia echioides was good; Anemone fulgens bicolor, novel. The flaming red Tulipa Greigi was well displayed. A collection of Fritillarias was included in the display (Silver Banksian Medal).

Messrs. John Peed & Son, West Norwood, London, displayed pans and boxes containing alpines. Saxifrages were largely represented. We noticed some good Polyanthus, also Auriculas. Messrs. Peed also exhibited flowers of their strain of Gloxinias.

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, set up a small rockwork on which were arranged many plants in flower. Ranunculus amplexicaulis was shown well; Meconopsis cambrica aurantiaca was noticed in flower, also Sarracenia purpurea. There were some good forms of Primula Sieboldi in the collection (Bronze Flora Medal).

Mr. G. Reuthe, Keston, Kent, showed some splendid forms of Primula Sieboldi, quite a collection of hardy Orchids, many good varieties of Daffodils, coloured Primroses, &c. (Bronze Flora Medal).

Mr. M. Prichard, Christchurch, Hants, showed Alyssum saxatile flore-pleno, a good yellow form. We noticed also a good pan of Uvularia grandiflora, well-flowered plants of Adonis vernalis, and many good species of Irises. Carex Frazeri is very curious, and has pure white flowers (Silver Banksian Medal).

The Misses Hopkins, Mere, Knutsford, Cheshire, showed many useful border and rock-garden plants.

Awards.

Carnation, Elizabeth.—This is a seedling obtained from the variety America. The growths are somewhat slender and the leaves long and whitish in appearance. The flowers are of good form; the calyx is said to remain good invariably, and the colour of the petals is clear, bright cherry-red. Though the flowers are less full, perhaps, than those of some varieties, they will be likely to become exceedingly popular. Shown by Sydney Morris, Esq., Wretham Hall, Thetford (gr., Mr. G. Henley (Award of Merit).

Cyrtanthus angustifolius grandiflorus.—A description and illustration of this plant will be found on p. 261; we need only remark here that Miss Willmott, Great Warley, Essex, exhibited a plant in flower in a pot, the inflorescence bearing ten flowers (Award of Merit).

Meconopsis integrifolia.—This magnificent species from Western China and Thibet was fully illustrated and described in our issue for October 1, 1904. Messrs. James Veitch & Sons on Tuesday last showed plants in flower, which had been lifted from the open ground. The plants were very strong, about 1½ foot high, and bore large, clear yellow flowers. The Committee unanimously awarded a First-class Certificate. The Scientific Committee with much more appropriateness awarded the plant a Botanical Certificate.

Orchid Committee.

Present: Harry J. Veitch, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshay, J. W. Odell, F. J. Thorne, R. G. Thwaites, A. A. McBean, W. H. White, G. F. Moore, H. Ballantine, H. T. Pitt, H. A. Tracy, W. Boxall, W. H. Young, F. W. Ashton, H. J. Chapman, H. Little, W. A. Bilney, and W. Thompson.

Norman C. Cookson, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman), was awarded a Silver-gilt Flora Medal for a very beautiful group, containing some of the highest examples of blotched Odontoglossum crispum, and all in a splendid state of cultivation. The most remarkable were the unique O. crispum Grairianum, which has developed into a wonderful variety, the greater part of its surface being of a glowing orange-tinted rose; O. c. Britannia, and O. c. Bryan, grand flowers heavily blotched with dark purple, and of the class of O. c. Cooksonæ; and O. c. Frederick, a large flower with white sepals and petals tinged with rose, and bearing effective dark purplish blotches, &c.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver-gilt Flora Medal for a fine group containing a varied selection of hybrids, species, and varieties. The Odontoglossums were the leading feature, O. crispum being well represented. The best of the blotched forms were O. c. Britain's Queen, which received an Award of Merit at the last meeting, and O. c. Britain's King, a still finer form, with some of the good qualities of O. c. Pittianum in its large, richly-coloured blotches. The lip is a very fine feature, being almost entirely of a bright claret colour with a narrow silvery-white margin and orange crest. Among other species, O. luteo-purpureum "Secundum Nulli" is one of the highest and most richly coloured forms of the species. In the group also were a bright batch of good Miltonia vexillaria, a number of M. Roezlii, some excellent forms of Cattleya Schröderæ, C. S. Pitt's variety, having a purplish-crimson labellum, much like C. Percivaliana; and C. S. Nellie had lavender-tinted sepals and petals and a purple blotch on the lip. Others noted were Epidendrum sceptrum, Trigonidium spatulatum, good specimens of Oncidium concolor and O. leucochilum, Galeandra devoniana, Cypripedium Sanderianum, Sarchochilus Fitzgeraldi, Dendrobium revolutum, &c.

Messrs. Sander & Sons, St. Albans, received a Silver Flora Medal for a group containing several fine hybrid Odontoglossums, one form of O. × Wilckeanum having very large creamy-white flowers effectively blotched with chestnut-brown, and the varieties of O. × crispo-Harryanum were of fine quality. Two forms of Miltonia × Bleuana and M × B. nobilior raised at Bruges had fine flowers delicately tinged with rose-colour, and were of a free-flowering type, one plant having four spikes. Others noted were an exquisitely-coloured form of Odontoglossum luteo-purpureum with large white lip, bearing a brown blotch in front of the crest; Angræcum Sanderianum, Cattleya intermedia alba and nivea, Cypripedium glanduliferum, the new C. × Mastersocallosum, Lælio-Cattleya × Ruby Gem (C. Lawrenceana × L.-C. × Schilleriana), a bright rose-purple flower; good L.-C. × Dominiana, Masdevallia × Pourbaixii, and on one end a pretty set of "botanical" Orchids, comprising three species of Polystachya, Nephelaphyllum pulchrum, with handsome leaves, &c.

C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), secured a Silver Banksian Medal for a neat group, principally of good Odontoglossums, among which were O. × warnhamensis (Halli × Pescatorei), a pretty flower well intermediate between the parents; O. triumphans latisepalum Bird's variety, with broad, yellow sepals and petals heavily barred with brown; O. crispum Mabel, prettily spotted; a very fine O. polyxanthum, good O. Edwardii and other Odontoglossums, &c.

Francis Wellesley, Esq., Westfield, Woking (gr., Mr. Hopkins), showed Cypripedium × Gowerianum giganteum, a very large and finely-coloured form; and Lælia × Mrs. Gratrix Westfield variety, of good size and shape, and of a bright, light orange colour.

Baron Sir H. Schröder, The Dell, Egham (gr., Mr. Ballantine), sent Odontoglossum crispum "Queen's Birthday," a showy variety evenly spotted with dark claret colour.

W. Thompson, Esq., Walton Grange (gr., Mr. W. Stevens), showed the prettily-marked Odontoglossum crispum heliotropium, O. × Stella, and the remarkable new O. × Thompsonianum (see Awards).

J. Bradshaw, Esq., Southgate (gr., Mr. Whitelegge), sent Cattleya × Empress Frederick var. xanthoglossa (with rich gold-veined lip), and Brasso-Cattleya × Digbyano Schröderæ var. Empress of India (a fine white flower with delicate blush tint on the sepals).

W. C. Walker, Esq., Winchmore Hill (gr., Mr. E. Bunney), showed a compact plant of Odontoglossum coronarium with a fine spike of flowers.

De Barri Crawshay, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed Odontoglossum Rossii immaculatum, with white flowers exhibiting none of the usual brown markings on the sepals and petals.

G. F. Moore, Esq., Chardwar, Bourton-on-the-water (gr. Mr. Page), again showed his fine Lælio-Cattleya × Pallas magnifica.

Mrs. Haywood, Woodhatch, Reigate (gr. Mr. C. J. Salter), showed Odontoglossum crispum "Woodhatch variety," having large white flowers with distinct brownish blotches.

G. W. Nicol, Esq., Banchory (gr. Mr. Andrew), sent a spike of a spotted form of Odontoglossum crispum.

Awards.

First-class Certificates.

Brasso-Cattleya × nivalis (B. fragrans × C. intermedia), from Sir Trevor Lawrence, Bart., Burford (gr. Mr. W. H. White).—A very pretty and fragrant hybrid, with flowers of the size of those of Cattleya intermedia, but of the form of those of Brassia tuberculata (fragrans). Flowers white with primrose disc to the lip. The plant had two spikes of five and six flowers.

Cattleya Schröderæ alba var. Madame Louis de Hemptinne, from the Marquis de Wavrin, Chateau de Rouselle, Somerghem, Belgium (gr., M. Gerard de Geest).—One of the finest white Cattleyas yet shown. Flower of perfect shape, and with beautifully crimped petals and lip. Pure white with yellow throat to the lip.

Cattleya Schröderæ "Robin," from J. Bradshaw, Esq., The Grange, Southgate (gr., Mr. Whitelegge).—A model flower, white tinted with lavender, and bearing a distinct violet-purple blotch in the centre of the lip.

Odontoglossum × Thompsonianum (Edwardi × crispum), from W. Thompson, Esq., Walton Grange, Stone (gr., Mr. W. Stevens).—A very remarkable hybrid, beautiful in itself, and likely to aid in the production of still more remarkable hybrids. The plant had the purple-tinted bulbs of O. Edwardi, and its tall branched inflorescence, only one flower on which had yet expanded. The flower was 2½ inches across, and shaped much like O. crispum, of a rich claret-purple, with rose tips and margin to the segments; crest of lip yellow.

Award of Merit.

Odontoglossum crispum Smeeanum, from Norman C. Cookson, Esq. (gr., H. J. Chapman).—A very distinct variety with large rose-pink flowers, bearing on the inner parts of the segments uniform light-brown spots.

Botanical Certificate.

Oncidium O'Brienianum, Rchb. f., from Miss Willmott, Great Warley, Essex (gr., Mr. Preece).—A curious species of the O. pubes section, with dense branched spikes of brown flowers with red-brown labellums.

Narcissus and Tulip Committee.

Present: H. B. May, Esq. (Chairman), and Messrs. A. R. Goodwin, Rev. S. Eugene Bourne, Jas. Walker, J. T. Bennett-Poë, W. Poupart, E. A. Bowles, R. W. Wallace, P. R. Barr, W. W. Fowler, Chas. T. Digby, J. R. D. Boscawen, W. M. Copeland, J. D. Pearson, Geo. Reuthe, John Pope, W. Goldring, W. T. Ware, Miss E. Willmott, Rev. G. H. Engleheart, and C. H. Curtis.

There were several important exhibits before this Committee, and not a few novelties were staged.

Messrs. Barr & Sons, King Street, Covent Garden, staged a representative gathering of choice kinds, in addition to many seedlings of merit, the more important of these latter being confined to white Ajax kinds. The following are some of the best varieties in this collection: Pharaoh (a fine bicolor), Primrose Phœnix, and Apricot Phœnix (in double kinds), Bobs (a whitish incomparabilis with paleish cup of orange-colour), and Maggie May. Cassandra is a fine variety of the poeticus type. Probably the most distinct thing among novelties is Narcissus odorus rugulosus maximus, the flowers being of a very rich yellow colour and three times larger than the ordinary forms of this kind. Early Tulips were also largely shown by Messrs. Barr (Silver-gilt Banksian Medal).

Messrs. Pope & Son, King's Norton, Birmingham, again showed King's Norton (a giant yellow Ajax), and Progress (a flower of the same type, but possessing more colour in the trumpet). Cristata shows evidence of doubling. White Queen and Orangeman are also worth noting (Silver Banksian Medal).

Messrs. Veitch & Sons, Ltd., Chelsea, contributed a collection of Tulips and of Narcissus in many good kinds. Among the latter were King Edward VII., a very fine poeticus and cristatus, the latter very handsome. Tulips King of Yellows and L'Unique were remarkable for their distinctive colour and good form.

The Gold Medal group from Miss Willmott was replete with the choicest kinds, and contained not a few novelties. A noticeable feature was the great size of many of the plants, and the remarkable substance of stems, leaves, and flowers. We have space to name but few of the varieties, but we may mention Great Warley (approximating a giant bicolor Sir Watkin), Selson (a big bicolor Ajax), Francesca, White Ajax, Warley Scarlet, Incognita, White Queen, Seagull and Betty Berkeley (Gold Medal).

Messrs. R. H. Bath, Wisbech, contributed both Tulips and Narcissus, among the latter Albatross, Golden Rain, White Lady, a lovely lot of Gloria Mundi with richly-coloured crowns, Madame de Graaff in abundance, Snow Queen, White Ajax, &c. A brilliant lot of Tulips was included in this exhibit (Silver-Gilt Banksian Medal).

Messrs. J. R. Pearson, Lowdham, Notts., also staged Daffodils of the choicest kinds, the freshness of the flowers being remarked—Maggie May, Minnie Hume, Gipsy Queen, Avalanche (a very handsome white Ajax), &c. (Silver-gilt Banksian Medal).

The Cup offered by Messrs. Barr & Sons was won by Mr. E. M. Crosfield, Little Acton, Wrexham, who had a choice and varied assortment.

Mr. A. S. Leslie Melville, Branston, Lincs., was the only other competitor for the Cup. He also staged a good collection, and was awarded a Silver Flora Medal.

Awards.

Narcissus Wm. Foster.—From Miss R. Spurrell, Norwich (Award of Merit). We were unable to locate this variety.

N. Helen Countess of Radnor.—A very handsome white flower of the Ajax type, showing a tendency to develop buff colour in the upper portion of the crown. From Miss Willmott, V.M.H., Warley. Essex (Award of Merit).

N. Banzai.—This is virtually an enlarged Madame de Graaff, with longer perianth-segments leaning to the trumpet (Award of Merit).

N. Countess of Stamford.—Also a white Ajax, and certainly a meritorious variety (Award of Merit).

Both exhibited by Mr. E. M. Crossfield, Wrexham.

N. Cornelia.—A self yellow of the Ajax type, with nearly cylindrical trumpet, rendering it a very distinct flower (Award of Merit).

N. Marie Hall.—This in effect is a bicolor "Queen of Spain," with a distinctly cylindrical crown. A very pleasing variety (Award of Merit).

These two were exhibited by Messrs. R. H. Bath & Co., Ltd., Wisbech.

Tulipa Fosteriana.—A very handsome species of a rich or intense glowing crimson colour, and a coloured base internally suggestive of a modified T. Greigii. From Miss Willmott, Warley Place, Essex (Award of Merit).

Tulipa dasystemon.—A very profuse flowering species, bearing as many as six or eight flowers in succession on a single spike. The plant is dwarf, with furrowed glossy foliage, and white-and-yellow flowers, the segments of which are acutely pointed. From Messrs. Cutbush & Sons, Highgate (Botanical Certificate).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq., Chairman; and Messrs. Jos. Cheal, Ed. Beckett, A. Dean, W. Fyfe, H. Parr, W. Pope, Geo. Kelf, J. Willard, G. Reynolds, J. Jaques, Owen Thomas, T. Arnold, and S. Mortimer.

First-class Certificate.

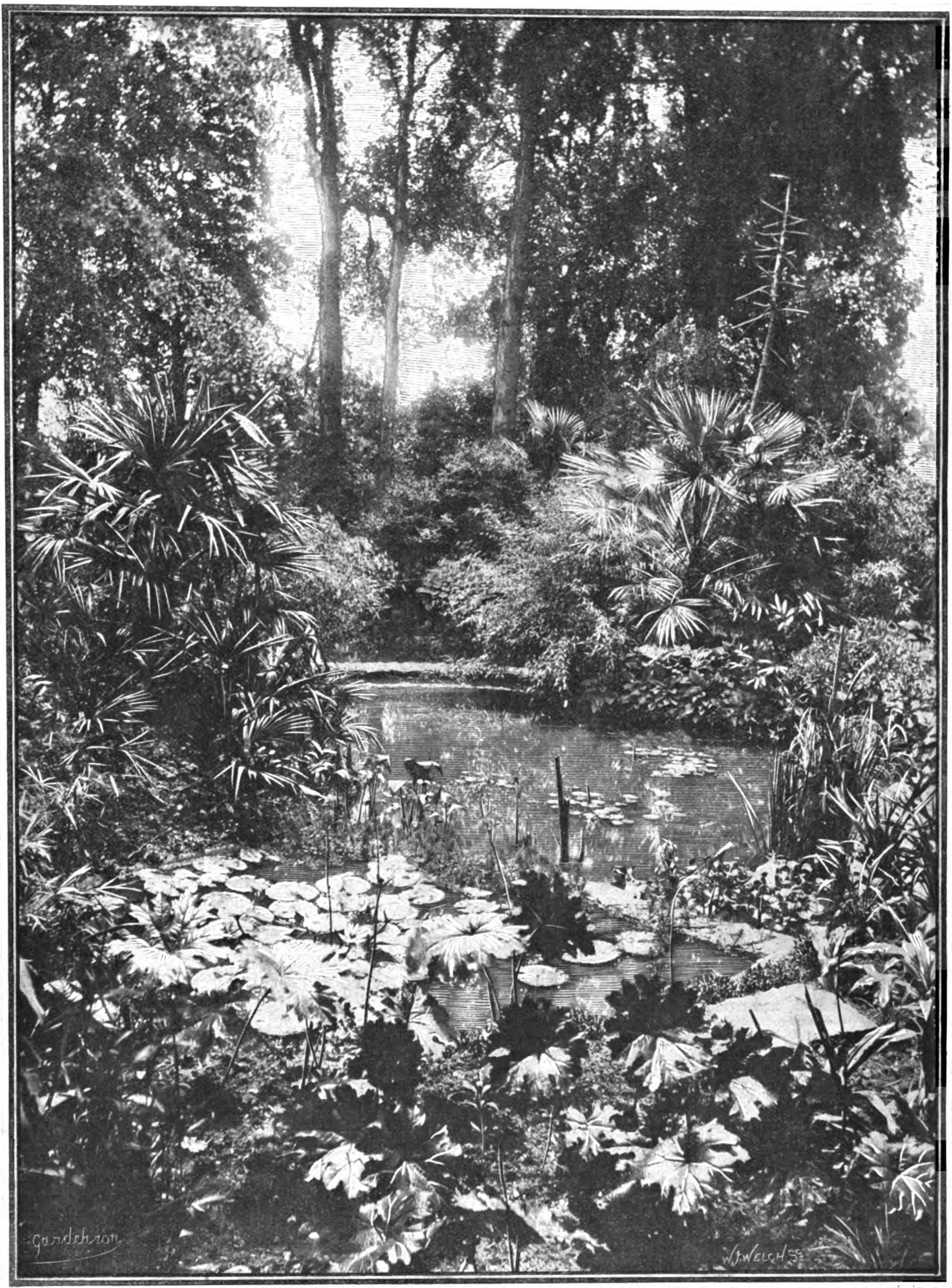
Potato The Factor.—Tubers of this variety were shown by Messrs. Dobbie & Co., Rothesay. The variety obtained an Award of Merit from the Committee on October 1, 1901, and since then it was found to be the best variety in the National Potato Society's trials, and in the Cambridge University trial; it was also awarded 1st prize at the Crystal Palace show in the class for cooked tubers. The general excellence of this Potato received further appreciation on Tuesday, for the Committee recommended it a First-class Certificate.

Lecture

ON THE CONSTRUCTION OF A JAPANESE GARDEN.

A paper on Japanese Gardening, written by Mr. Jas. Hudson, of Gunnersbury House Gardens, Acton, was read before the Fellows by the Secretary. Our readers will doubtless remember the descriptions of the Japanese gardens at Gunnersbury House which appeared in our issues for April 5, May 10, and July 12, 1902, when many scenes in the gardens were illustrated. We take this opportunity of presenting another view (see p. 269), which will further enable our readers to appreciate the beauty of this style of gardening. Mr. Hudson, in his paper, pointed out the best manner of adapting a garden for this style of planting, the necessity for a bountiful supply of water, and the need for a well-sheltered situation to enable many of the tender plants from the southern parts of Japan to withstand the influences of bitter north-west winds, such as we have experienced recently. A list of plants that are suitable for the Japanese garden was given, also of the best materials for constructing paths, bridges, fences, and the proper manner of making these. The provision of water-gardens and rock-pools is essential for producing the best effect, as may be seen on reference to our illustration on p. 269, fig. 111. It was unfortunate that Mr. Hudson was unable to be present, as no explanations were given of the lantern-slides, which were exhibited promiscuously, without direct reference to the paper read.

A paper by Monsieur Albert Maumené, of Paris, on "Japanese Dwarf Trees, and their Production and Treatment," was taken as read, and will, with that of Mr. Hudson, be published in the *Journal* of the Royal Horticultural Society. In this paper Monsieur Maumené describes the various forms of these trees in Japan, the different methods of raising and of training them, the varieties of plants most suitable for dwarfing, and their treatment in this country. The main points brought out were the unwearying patience and perseverance of the Japanese in producing these plants, and that the dwarfing is principally due to limiting the space available for the roots, and also by reducing their number, and by providing a minimum supply of water and nourishment to maintain the life of the tree, while the twisting and curving also retarded the sap. The trees might be roughly classed as those which represent miniature reproductions of their natural appearances, and those which are twisted, curved, and shaped to a certain preconceived idea.



[From a photograph by J. Gregory.

FIG. 111.—VIEW IN THE JAPANESE GARDEN AT GUNNERSBURY HOUSE.
(See Report of Lecture by Mr. Hudson on p. 263.)

NATIONAL AURICULA & PRIMULA.

APRIL 25.—This Society's exhibition, held in conjunction with the ordinary meeting of the Royal Horticultural Society in the Horticultural Hall, Vincent Square, Westminster, resulted in a very excellent all-round display of the Primula race. It was feared that the cold northerly winds which have prevailed for at least a week previous to the show would have affected the flowers, thereby producing a certain amount of roughness in the blooms, but this was not apparent, except in a few instances. On the whole the "show" varieties were exhibited in as good character as in years past, and seeing that six collections of twelve varieties were staged, and nine of six varieties, no one can venture to say with truth that the cult of the Auricula for exhibition is on the decline.

The northern growers were represented by the Rev. F. D. HORNER, and by one or two Birmingham growers, but the greater part of the displays were staged by the southern growers. Mr. J. DOUGLAS, was, as he usually is, most successful.

Show Auriculas, "Edged" and "Self."—In the class for twelve show varieties, "edged" and "self," Mr. J. DOUGLAS, Great Bookham, was 1st, having "Green edges": Mrs. Henwood (with seven very finely-developed pips), Abbé Liszt, and Abraham Barker, the latter with a somewhat narrow body colour. "Grey edges": Olympus (a good addition to the section) and Geo. Lightbody. "White edges": Magpie, Venus, and Acme. "Selfs": Ruby, Mrs. Barnett, Mrs. Phillips, and Favourite. The Rev. F. D. HORNER, Burton-in-Lonsdale, was 2nd. He had of "Green edges": Dr. Horner (bright green with good pip), Henry Wilson (somewhat resembling Mrs. Henwood, but with a brighter edge), Redoubtable (having a bright green edge and a good coloured body), and Ben Simonite. "Grey edges": Coronation and Orpheus. "White edges": Frost, Melanie, and Quicksilver. "Selfs": Favourite (black), Little Nell, and Red Flag. Mr. J. H. WILSON, Handsworth, Sheffield, was 3rd. He had Gerald ("self") in good character.

There were, as stated, nine collections of six varieties. Mr. J. DOUGLAS was again placed 1st, with the varieties Mrs. Henwood and Abbé Liszt, "Green edge"; Geo. Lightbody, "Grey edge"; Acme, "White edge"; Mrs. Burnett and Raven, "Selfs." The Rev. F. D. HORNER was 2nd with Orion, Prometheus, and Shirley Hibberd, "Green edges"; Orpheus, "Grey edge"; Red Light and Loveliness, "Selfs." 3rd, Mr. M. R. SMITH, Hayes Common (gr., Mr. C. Blick), his three best plants were Mrs. Henwood and Shirley Hibberd, "Green edges"; and George Lightbody, "Grey edge."

There were six collections in the class for four varieties, Mr. W. H. SHIPMAN, Altrincham, was placed 1st, he having Mrs. Henwood (very bright Edge) and Abraham Barker, "Green edge"; Geo. Rudd, "Grey edge"; and Ruby, "Self." 2nd, Mr. PURNELL-PURNELL, with Dr. Kidd, "Green edge"; Heather Bell and Acme, "White edge"; and Ruby, "Self."

The best pair of "show" varieties came from Mr. F. WELLESLEY, Westfield, Woking, who had Geo. Rudd, "Grey edge," and Mrs. Potts, "Self." Mr. A. S. HAMPTON, Reading, was placed 2nd with Vanity, a bright "Green edge," and Rachel, "White edge."

Single Specimens, Show varieties.—"Green edge": 1st, Mr. W. SMITH, with Mrs. Henwood, whose plant had seven well-developed pips. 2nd, Mr. J. T. BENNETT-POË, also with the variety Mrs. Henwood. Mr. A. S. HAMPTON was 3rd. "Grey edge": 1st, Rev. F. D. HORNER with Orpheus. Mr. J. WILSON was 2nd with Rachel; and Mr. F. A. WELLESLEY, 3rd with William Brockbank. "White edges": 1st, Mr. J. T. BENNETT-POË with Acme. 2nd and 3rd, Mr. WELLESLEY with the same.

Collections of Fifty Auriculas.—In this class, as usual, Mr. JAMES DOUGLAS was 1st with a varied collection of good quality. The leading "Green edges" were Rev. F. D. Horner, Abbé Liszt, Abraham Barker, and Gladiator. "Grey edges": Geo. Rudd, Beauty, Lancashire Hero, Olympus and Rachel. "White-edges": Venus, Heather Bell, Wild Swan, Amy Robsart and Miss Prim; "Selfs": Ruby, Mrs. Phillips and Buttercup. Several of the foregoing varieties were duplicated. This was also seen in a good collection staged by Mr. W. SMITH, Bishops Stortford, who has made many excellent attempts to gain the premier prize in this class. 3rd, Mr. W. B. CRANFIELD.

The Premier Show Auricula was Mr. JAS. DOUGLAS's fine plant of Mrs. Henwood in Class 1.

Alpine Auriculas.—These were both numerously and well shown, their brilliancy of colour commanding general admiration. There were seven collections of twelve varieties, resulting in a close contest for the supremacy between Messrs. PHILLIPS & TAYLOR, of Brackley, and Mr. J. DOUGLAS, in favour of Messrs. PHILLIPS & TAYLOR, who had a grand dozen, many of which were seedlings. The varieties were Richard Dean (a brilliant alpine), Duke of York, Cavalier, and unnamed seedlings. "White centres": Boadicea (edged with pale rosy-lilac), and seedlings. Mr. J. DOUGLAS came 2nd with Duke of York, Rosy Morn, Ettrick (a flower of fine quality), Premier (with bright yellow centre, the colour mauve shading to rose); and of "White centres": Teviotdale, Hilda, Thetis, and Ganymede. 3rd, Mr. M. R. SMITH.

There were six collections of six varieties, and Mr. J. DOUGLAS was placed 1st with a fine even lot, having of "Gold centres": Duke of York, Firefly, and Rosy Morn. "White centres": Urania, Thetis, and Teviotdale. Messrs. PHILLIPS & TAYLOR came 2nd with "Gold centres": Mrs. Martin Smith, Duke of York, and two seedlings. "White centres": Boadicea and seedlings.

In the class for four alpines, Mr. F. W. PRICE, Beckenham, was placed 1st, apparently the only competitor.

Single specimens.—"Gold centres": Mr. F. W. PRICE, Beckenham, was 1st with a highly-refined seedling; 2nd, Messrs. PHILLIPS & TAYLOR, with Pluto and Calypso. "White centres": 1st, Mr. J. DOUGLAS with Teviotdale, who was also 2nd with the same variety. This promises to be a valuable addition to those with violet-shaded white centres. Mr. E. DANKS was 3rd with Thetis.

In the class for six Alpines shown by maiden growers, Mr. E. DANKS was awarded 1st prize.

Alpine Seedlings, single specimens.—"Gold centres": Messrs. PHILLIPS & TAYLOR came 1st with a fine seedling of promise; Mr. F.W. PRICE, 2nd. The best "white centre" was Rockdale, from Mr. J. DOUGLAS.

Mr. A. SPURLING took the 1st prize for six seedling alpines raised from seeds supplied by Mr. J. DOUGLAS.

The Premier Alpine Auricula was Ettrick, shown by Mr. J. DOUGLAS. The flower develops a bright yellow centre with groundwork maroon coloured shading to rose and margined salmon.

Fancy Auriculas.—As usual, Mr. J. DOUGLAS was placed 1st. He had Rolts Green with its bright rosy-red body colour; Buttercup, and various eccentric, unnamed sorts, too good to be rejected, but to be classed only as fancies. Mr. W. B. CRANFIELD, Branley House, Enfield, was 2nd.

Species of Primulas.—The class for twelve specimens was not represented.

In the class for six specimens, Mr. J. GRANDFIELD was 1st, and he had P. obconica, P. verticillata, and four well-flowered varieties of P. Sieboldi. Mr. PURNELL-PURNELL, Streatham Hill, was 2nd.

Primulas and Auriculas.—The class for a collection made a very attractive feature, Mr. J. GRANDFIELD taking the 1st prize. Mr. PURNELL-PURNELL was placed 2nd.

Polyanthus, Fancy.—Three collections of twelve plants were staged. Mr. S. MORTIMER, Rowledge, Farnham, took the 1st prize with a bold and striking collection. Mr. G. BASKETT, Virginia Water, was 2nd.

Groups of Primrose and Polyanthus Plants.—Mr. S. MORTIMER was placed 1st, with an excellent collection. Mr. BASKETT was 2nd.

SEEDLINGS.

Certificates of Merit were awarded to the following:

The Mikado.—A "self" having an excellent tube and paste, dark, with well-displayed body colour, the pip being smooth and stout; foliage green. A highly promising variety. From Mr. N. SMITH, Bishop's Stortford.

Richard Dean.—An "alpine" with bright golden centre and dark ground shading to fiery salmon. A large, smooth, flat, well-proportioned flower.

William Smith.—Also an "alpine," having the pip smooth and highly refined; colour bright gold with a dark body shading to fiery rosy-crimson. Both from Messrs. PHILLIPS & TAYLOR, Bracknell.

Mrs. H. O. Crowther.—The flower possesses a golden centre, dark body colour with bright ruby shading, somewhat paler on the margin of the pip; very smooth and of excellent quality.

Miss Winifred.—This also has a golden centre; the anthers are set somewhat shallow; body dark, shading to rose and paler salmon. From Mr. C. BLICK, Hayes Common.

LINNEAN.

APRIL 6.—A meeting was held on the above date, when Mr. A. C. Seward, F.R.S., Vice-President, presided.

Mr. W. Botting Hemsley, F.R.S., F.L.S., exhibited a number of specimens and drawings of pitchers of Nepenthes, supplemented by slides, prepared by Mr. L. Farmar, to illustrate the various types of pitchers and their marvellous glandular systems (see p. 241).

Prof. R. J. Harvey Gibson, M.A., F.L.S., gave the substance of his paper on "The Axillary Scales of Aquatic Monocotyledons." He compared the ligule of Selaginella with the scales in question, and suggested that the latter may be looked upon as evidence that the Monocotyledons may be regarded as modern representatives of primitive Angiosperms, and in turn may have been genetically related to some ancestral form allied to Isoetes. These scales had been examined in seventeen species of Zostera, Potamogeton, Ruppia, Aponogeton, Triglochin, Alisma, Sagittaria, Butomus, Limnocharis, Halophila, Stratiotes, Hydrocharis, and Vallisneria, belonging to six natural orders of Helobiæ. The author's remarks were illustrated by lantern-slides.

Mrs. L. J. Veley, F.L.S., presented a paper, "A Further Contribution to the Study of Pelomyxa palustris (Greeff)," illustrating her remarks with a series of lantern-slides.

Dr. D. Prain read a note on "Mansonieæ, a New Tribe of the Natural Order Sterculiaceæ," and exhibited specimens and diagrams of a species of the tribe, sent to the Calcutta Botanic Garden by Mr. F. B. Manson, of the Indian Forest Department. The species is the type of a new genus, Mansonia, J. R. Drumm. MSS. Its nearest ally is an African genus, Triplochiton. Definitions are given in the paper of the tribe Mansonieæ and of the genus Mansonia; a description is also given of the species, M. Gagei, J. R. Drumm. MSS.

ROYAL BOTANIC.

APRIL 19.—The Society's show held on the above date was fairly representative, many exhibitors displaying groups, the principal of which were arranged in the conservatory. Several spaces were well filled with economic plants from the Society's greenhouses, while a bright display of flowering plants in the conservatory and in the gardens presented a pleasing appearance. The weather unfortunately prevented a large attendance of visitors.

Among the nurserymen's exhibits the most important was that displayed by Messrs. CUTBUSH & SONS, Highgate, who arranged a large rock-garden planted in a natural style, and having a background composed of Bamboos and other subjects (Gold Medal).

Messrs. R. & G. CUTHBERT, Southgate, put up a fine group of hardy deciduous flowering shrubs arranged with suitable foliage. The group contained some fine varieties of Azalea rustica flore-pleno, A. sinensis hybrids, and the finest mollis varieties (Large Silver-gilt Medal).

Messrs. CANNELL & SONS, Swanley, presented a large collection of cut flowers of zonal Pelargoniums. The trusses and individual flowers were alike remarkable for their size and for their wide range of colour (Large Silver-gilt Medal).

Messrs. F. CANT & CO., Colchester, made a fine exhibit of cut Roses, including some new varieties (Large Silver-gilt Medal).

Mr. GEO. MOUNT, Canterbury, had an equally interesting exhibit of Roses. Most of the blooms were carried on long stems with remarkably fine foliage and strong growth (large Silver-gilt Medal).

Messrs. BARR & SONS, King Street, Covent Garden, had many choice sorts of Daffodils similar to those seen the previous week at the Royal Horticultural Society's meeting (large Silver-gilt Medal).

Messrs. BATH, Ltd., Wisbech, received the same award for an equally interesting exhibit, while Messrs. HOGG & ROBERTSON brought a fine collection of these flowers from Ireland, in addition to St. Brigid Anemones, Tulips, &c. (Silver-gilt Medal).

Dr. BOXALL, showed Begonia Lorenziana, a free-flowering variety of the President Carnot type, and to which a First-class Certificate was awarded.

H. L. BISCHOFFSHEIM (gr., Mr. C. G. Ellis), The Warren House, Stanmore, put up a fine group of plants, consisting chiefly of Anthuriums and Orchids. The Warren House variety of Odontoglossum Andersonianum was awarded a Certificate of Merit (Gold Medal).

Miss ANDERSON (gr., Mr. Kelf), Regent's Park, put up a large group of spring flowering plants and foliage (Gold Medal).

Mr. E. WAGG, The Islet, Maidenhead, showed well-grown plants of the best type of Cinerarias (Silver-gilt Medal).

Sir F. T. BARRY, Bart., Windsor (gr., Mr. R. Brown), staged a collection of Camellias, cut from bushes in the open ground (Silver Medal).

A Cup, valued seven guineas, offered by Messrs. Barr & Sons for the best collection of Daffodils, was secured by H. R. DARLINGTON, Esq., Potters Bar, who put up a very nice collection, which included many of the newer varieties.

Mr. SAGE, Richmond, brought examples of the Bruce flower displayers; while Mr. WILLIAMS, Ealing, showed flower stands adapted for light table arrangements.

CHESTER PAXTON.

APRIL 11, 12.—This Society's fourth annual exhibition of spring flowers was held in the Town Hall, Chester, on the above dates. The opening ceremony was performed by Her Grace Katharine Duchess of Westminster. Large collections of cut Daffodils were staged, those displayed by Mr. HUGH ALDERSEY, of Aldersey Hall, and Messrs. DICKSONS, LTD., being particularly good. Both of these exhibits were awarded the Society's Medal. His Grace the Duke of WESTMINSTER (gr., Mr. N. F. Barnes) staged an attractive exhibit, which included about forty dishes of Apples and a collection of Souvenir de la Malmaison Carnations.

The President of the Society, Major MACGILLYCUDDY, J.P. (gr., Mr. E. Stubbs), put up a most extensive collection of plants, including some remarkably fine Callas and Azaleas, and a collection of choice Daffodils. An interesting stand of Storrie's strain of ornamental Kale was also staged by Mr. Stubbs.

The exhibit sent by Dr. MULES, of Gresford, included choice and rare species of hardy Primulas, Narcissi, and other spring flowers.

Messrs. SUTTON & SONS, Reading, put up an admirably-arranged stand of Cinerarias (Silver Medal).

Messrs. MCHATTIE staged a choice lot of Hyacinths. Other exhibitors included Mr. T. GIBBONS FROST, Mollington Banastre (gr., T. Gilbert); Mr. J. M. FROST, Upton Lawn (gr., W. Seddon); Mr. J. GARRETT FROST, Boughton Hall (gr., J. Clack); Mr. Tyrer, Plas Newton (gr., A. Ellams); Mr. TOWNSEND CURRIE, Christleton Hall (gr., J. Weaver); and Miss HUMBERSTON, Newton Hall (gr., R. Wakefield).

THE BRITISH GARDENERS' ASSOCIATION.

IN addition to those previously reported meetings were held :—

At *Penrith*, on the 5th inst., at the Exchange Hotel, Mr. A. Statham, of Edenhall Gardens, presiding over a good attendance of local horticulturists. The objects of the Association having been explained by Mr. J. W. Mallinson, it was, after a good discussion, unanimously resolved "that a local branch of the British Gardeners' Association be formed." Mr. Mallinson, whose address, Edenhall, Langwathby, R.S.O., Cumberland, readers in the district are requested to note, was appointed local secretary.

A special general meeting of the *Tunbridge Wells* Gardeners' Association was held in the Friendly Societies' Hall on Tuesday, April 11, to hear an address by Mr. W. Watson, Secretary of the British Gardeners' Association. Mr. C. Taylor, of Messrs. Cripps & Son, occupied the chair, and about 160 members and others were present, including the principal gardeners and nurserymen of the district. Mr. Watson's address was on the same lines as that given at Birmingham, Kingston, &c. A resolution to form a branch of the British Gardeners' Association for Tunbridge Wells and district was adopted with only three dissentients, and a committee was at once elected, with Mr. Goacher as Secretary.

At *Sutton* on the 11th inst., a meeting convened by the local horticultural society was addressed by Mr. R. Hooper Pearson.

GARDENERS' DEBATING SOCIETIES.

BOURNEMOUTH AND DISTRICT GARDENERS'.—A meeting of the above Society was held on Tuesday, April 18, presided over by Mr. F. W. George, Thornleigh Gardens. Mr. A. King, of the Parkstone Nurseries, exhibited well-grown plants of Schizanthus wisetonensis, also pots of Mignonette and examples of the St. Brigid Anemones. Mr. King also delivered a lecture on the cultivation of these plants. A good discussion followed.

Obituary.

JOHN NEWBIGGING.—The death of Mr. John Newbigging, of the firm of Messrs. T. Kennedy & Co., seedsmen and nurserymen, Dumfries, took place on Tuesday of last week at Las Palmas, Grand Canary, whither he had gone for the benefit of his health. Deceased, who sailed for Las Palmas on the 22nd of last month, had been ailing for a considerable time, and had been disabled for business since Christmas. He was in his forty-fourth year, and he leaves a widow and two children to mourn his untimely death. He was a partner with his brother, Mr. T. K. Newbigging, in the well-known firm of Messrs. Kennedy & Co., whose extensive business, founded in the town by his great-grandfather, was successfully carried on by his grandfather, Provost of Dumfries, and by his father, a former Bailie of the town, since whose death it has continued in the hands of the deceased and his brother. The department of the business to which Mr. John Newbigging more particularly applied himself was that of the nurseries, and he developed these with marked success. He made a special study of arboriculture, and on behalf of his firm he carried through more than one Government order in connection with forest-planting operations in Ireland and elsewhere. In 1903, when the Highland and Agricultural Society held their show in Dumfries, he was appointed Secretary of the exhibition in connection with the Scottish Arboricultural Association. But besides being a first-rate business man, he possessed personal qualities that made him a great favourite with everyone with whom he was brought into contract, and in social as in business circles he will be much missed.

JULIEN VICTOR BURVENICH.—We regret to have to record the death, on the 21st inst., at Ghent, of this gentleman, who held the office of Curator of the University Botanic Garden. Mr. Burvenich was in his forty-eighth year.

JOHN HORNE.—The death is announced of Mr. John Horne, F.L.S., late Director of the Botanic Gardens, Mauritius, who latterly has lived at Sea Braes, St. Clement, Jersey. Deceased, who left the Royal Gardens, Kew, in 1860, was an occasional correspondent to these pages.

MARKETS.

COVENT GARDEN, April 26.

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, p. doz. bunches, pink	2 0-3 0	Ixias, per dozen bunches... ...	2 6-3 0
— fulgens ...	2 0-3 0	Marguerites, per doz. bunches ...	2 0-3 0
Carnations, per doz. bunches ...	9 0-12 0	Narcissus, basket	3 0-4 0
Fern, French (Asplenium adiantum nigrum), p. dozen bunches	6 0 —	Ranunculus, per doz. bunches ...	6 0-9 0
Freesias, dz. bun.	2 0-4 0	Stocks, double white and pink, dozen bunches	2 6-3 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6-0 9	Galax leaves (American), per dozen bunches.	1 6-2 0
— — medium, each ...	0 4-0 6	Ivy-leaves, bronze	1 6-2 0
— — short sprays per bunch...	1 0-2 6	— long trails, per bundle ...	1 0-2 0
— Sprengeri ...	0 9-1 6	— short green, doz. bunches	1 0-1 6
— tenuissimus..	9 0-12 0	Moss, per gross...	6 0 —
Adiantum cuneatum, doz. bun.	4 0-6 0	Myrtle, doz. bun.	3 0-4 0
Croton leaves, doz.	1 0-1 6	Smilax, p. dozen trails	4 0-6 0
Cycas leaves, each	1 6-2 0	Hardy foliage (various), per dozen bunches	3 0-4 0
Fern, English, p. dozen bunches	3 0-4 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia armata, doz.	12 0-18 0	Ferns, in 32's, doz.	12 0-24 0
Aralia Sieboldi, p. dozen	4 0-6 0	— hardy roots ...	0 6-1 0
Araucaria excelsa, per dozen ...	18 0-30 0	Ficus elastica, p. doz.	9 0-12 0
Aspidistras, green, per doz. ...	18 0-24 0	— repens, per doz.	6 0-9 0
— variegated, per doz. ...	30 0-42 0	Fuchsias, p. doz.	8 0-10 0
Azalea indica, doz.	30 0-60 0	Genistas, per doz.	5 0-8 0
— mollis, p. doz.	24 0-42 0	Heliotropes, doz.	5 0-8 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	Hydrangea, Thos. Hogg, p. doz.	12 0-18 0
— Sprengeri, doz.	8 0-12 0	— Hortensia, p. dozen	10 0-15 0
— tenuissimus per doz. ...	8 0-10 0	Kentia Belmoreana, per doz...	12 0-18 0
Bedding plants, store boxes, each	1 0-1 6	— Fosteriana, p. doz.	12 0-21 0
Begonia Gloire de Lorraine, doz.	12 0-18 0	Latania borbonica, per doz. ...	9 0-15 0
Boronia megastigma, p. doz.	12 0-24 0	Lilium Harrisii, per dozen ...	24 0-30 0
— heterophylla.	18 0-24 0	Marguerites, doz.	6 0-10 0
Calla æthiopica, per doz. ...	6 0-10 0	Mignonette, doz.	6 0-8 0
Cinerarias, p. doz.	5 0-8 0	Pansies, per box...	2 0-3 0
Crotons, per doz.	12 0-30 0	Pelargoniums, per doz., Show.	12 0-18 0
Cocos Weddelliana, per doz. ...	18 0-30 0	— Ivy-leaved, p. dozen	6 0-8 0
Cyclamen persicum, per doz.	15 0-24 0	— zonals ...	6 0-8 0
Cyperus alternifolius, p. doz.	3 0-5 0	Rhodanthe, doz.	5 0-6 0
— laxus, p. doz.	3 0-4 0	Rhododendrons, per dozen ...	24 0-30 0
Dracænas, p. doz.	9 0-24 0	Roses, H.P.'s, doz.	9 0-18 0
Ericas, per doz....	12 0-30 0	— Crimson Rambler (large), each	3 6-5 0
Euonymus, dozen	4 0-9 0	Spiræa japonica, per doz. ...	5 0-10 0
Ferns, in thumbs, per 100... ...	8 0-12 0	Stocks, Intermediate, per doz.	4 0-6 0
— in 48's, p. doz.	4 0-10 0	Verbena, Miss Willmott, doz.	10 0-12 0

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Azalea Fielderi, per doz. bun..	3 0-4 0	Lilium longiflorum ...	3 0-5 0
— mollis, dz. bun.	9 0-12 0	— tigrinum ...	2 0-2 6
Bouvardia, dz. bun.	6 0-8 0	Lily of the Valley, dozen bun. ...	12 0-24 0
Calla æthiopica, per doz. blooms	3 0-4 0	Marguerites, per doz. bunches, white	3 0-4 0
Camellias, per dz. blooms	1 6-2 0	— yellow... ...	3 0-5 0
Carnations, p. dz. blooms, best American vars.	2 6-5 0	Mignonette, doz. bunches ...	4 0-6 0
— smaller do. ...	1 0-2 0	Narcissus, p. doz. bunches, Pheasant's Eye ...	1 0-2 0
— Malmaisons...	8 0-12 0	Odontoglossum crispum, pr. dz. blooms	1 6-2 0
Cattleya, per doz. blooms	10 0-12 0	Pelargoniums, p. doz. bnchs.	
Daffodils, per dz. bunch., single yellow ...	2 0-4 0	— (Zonal) double scarlet ...	5 0-10 0
— double, do. ...	2 0-3 0	— salmon & pink	4 0-6 0
— Barrii conspicuus ...	3 0-4 0	Poppies, Iceland, dozen bunches	6 0-9 0
— bicolor... ..	2 0-4 0	Roses, 12 blooms, Niphetos ...	1 0-3 0
Dendrobium nobile, doz. blooms	1 6-2 0	— Bridesmaid...	3 0-5 0
— Wardianum...	1 0-2 0	— Kaiserin A. Victoria ...	5 0-6 0
Eucharis grandiflora, doz. blms.	4 0-6 0	— General Jacqueminot ...	1 0-2 0
Gardenias, per dz. blooms	1 0 2 0	— C. Mermet ...	3 0-4 0
Gladiolus Colvillei, per bunch ...	1 0-1 6	— Caroline Testout	3 0-6 0
Gypsophila, per dozen bunches	3 0-4 0	— Liberty ...	3 0-5 0
Iris Germanica, p. bunch	0 9-1 0	— Mad. Chatenay	4 0-7 0
— Spanish, dz. bun.	2 0-3 0	— Mrs. J. Laing.	3 0-5 0
Lilac (English forced), per bun.	2 0-3 0	— Sunrise ...	1 6-2 6
Lilium auratum, per bunch ...	2 6-3 0	Tuberoses, per dozen blooms	0 3-0 6
— lancifolium, rubrum and album... ...	2 6-3 6	Tulips, doz. bun.	6 0-12 0
		— special double varieties ...	18 0-24 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen ...	2 6 —	Mushrooms (house) per lb.... ...	0 9 —
— Jerusalem, p. bag	3 0 —	Onions, pickling, per sieve ...	5 0-6 0
Asparagus, bunch	5 0 —	— Egyptian, cwt.	6 6-7 0
— Giant.... ...	8 0 —	— English, cwt.	15 0 —
— Paris Green...	2 3 —	— Green, p. doz.	3 6 —
— Spanish, bunch	1 4 —	Parsley, 12 bunch.	1 0 —
— Sprue, p. doz.	5 0 —	Parsnips, per bag	3 6 —
— Toulouse, bch	2 6 —	Peas, French, pkt. per 10 kilos	7 0 —
Beans, dwarf, per lb.	1 0 —	— Frame, per lb.	0 9-1 0
— Channel Island	1 0 —	— Flats	8 0 —
— Canary, Broad per basket ...	1 6 —	Potatos, per ton	50 0-90 0
Beetroot, bag ...	2 6 —	— Frame, lb. ...	0 3 —
Broccoli, Sprouting, bag... ...	1 6 —	— Algerian, per cwt.	14 0 —
Cabbages, p. tally	3 0-5 0	— Teneriffe, cwt.	15 0 —
Carrots, 12 bunch.	3 0 —	Radishes, p. doz. bunches ...	0 5-0 7
— new, 12 bunch	0 8 —	Rhubarb, York, dz.	0 6-0 8
— bag	3 6 —	— Natural, doz.	1 6-2 0
Cauliflowers, doz.	3 0- —	Salad, small punnets, per doz	0 9 —
Celery, doz. bnchs.	8 0 —	Seakale, per doz.	9 0 —
Cress, doz. pun.	0 9 —	Shallots, p. sieve	8 0 —
Cucumbers, doz.	2 6-3 0	Spinach, bush. ..	1 6 —
Endive, per doz.	1 6 —	Tomatos, bundle	12 0-18 0
Garlic, per lb. ...	0 3-0 4	— English, p. lb.	1 3 —
Greens, bushel ...	1 0 —	Turnips per doz.	1 6 —
Horseradish, per doz.	9 0 —	— per bag ...	2 0 —
Mint, per dozen...	4 0-6 0	— new, bunch ...	0 8 —
Leeks, per dozen bundles	2 0 —	Turnip-tops, bag	1 6 —
Lettuces, Cabbage, per dozen ...	0 9 —	Vegetable Marrows, per doz. .	7 0-10 0
		Watercress, per doz. bunches.	0 6 —

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, bushel ...	2 6-6 0	Grapes, Alicante, per lb. ...	2 6-3 0
— English, per sieve or half bushel ...	1 6-3 0	— Hambro, lb....	2 9-4 6
— — per barrel.	12 0-18 0	— Almeria, doz. lb.	8 0 —
— Victorian and Tasmanian, p. case	9 0-12 0	Lemons, per case	8 0-11 0
Bananas, per bunch... ...	6 0-10 0	Melons, each ...	1 6-3 0
— loose, per dozen	1 0-1 6	Oranges, per case	8 6-20 0
Figs, per dozen...	4 6-10 0	— Blood, p. box	6 0 —
Grape-Fruit, per case	10 0 —	— Jaffa, per box	14 0-16 6
Grapes, Gros Colmar, lb., A.	3 0-4 6	— Murla, per case	9 0 —
— — B.... ...	2 6-3 0	— Tangierines, p. box	3 6 —
		Peaches, doz., A.	30 0 —
		— „ B.	18 0 —
		Pines, each ...	2 0-3 0
		Strawberries, A., lb.	4 0 —
		— — B., per lb...	2 0 —

POTATOS.

Dunbars, 100s.; various, home-grown, 50s. to 80s. per ton; seed in variety. *John Bath, 32 & 34, Wellington Street, Covent Garden.*

COVENT GARDEN FLOWER MARKET.

Although there are indications of increased trade, there is little advance in prices. Zonal Pelargoniums in several varieties are of good quality; Ivy-leaved varieties are also good, but at present are not well furnished with flowers. The show or regal sorts are also plentiful. Good Indian Azaleas are still seen; "whites," which went up to 5s. each last Saturday, are again down to about 3s. Some good A. mollis are seen; these do not sell readily. Well-flowered plants of Rhododendrons are to be had, but there is little demand. Good Genista plants are still coming in, but some are very rough in quality. Spiræas are plentiful: these vary much in quality. Supplies of Cinerarias are now shorter; there are also very few good Cyclamen to be seen. Ericas continue plentiful, and now include E. ventricosa magnifica, E. hybrida, and E. mirabilis; the last named is an old variety now rarely grown. Verbena Miss Willmott is well grown and sells readily. Rhodanthe is arriving from several growers. Mignonette varies in quality; some very fine samples can be had. Plants of Hydrangeas are good; the variety Thos. Hogg sells readily, but H. Hortensia does not clear quite so well. Intermediate Stocks are now at their best; with milder weather they will be in demand. Plants of Marguerites are good, and sell fairly well. Supplies of Roses are now larger, including many H.P.'s; these vary much in quality. Madame Levavasseur is coming from several growers; some of the specimens are very good, but many are of indifferent quality. Crimson Rambler is obtainable in various sized plants. The cold weather quite stopped the demand for Heliotropes last week. There is little difference in the amount of supplies and in the prices of foliage plants. There is a better demand for Ferns and Palms: supplies of these are quite equal to all demands, in fact small Ferns are over-abundant. The trade for bedding plants has not increased much. The cold weather has deteriorated much of the stock.

CUT FLOWERS.

Prices for Roses were high at the end of last week, but they are now down again, and the demand for special blooms does not equal the increased supplies. Medium-sized flowers sell rather more readily. Supplies of Lily of the Valley are scarce, and prices for these flowers have advanced considerably. Liliums are down again in price. Good Callas are not over-plentiful. Among Daffodils the bicolors and Barrii conspicuus are the chief varieties seen. Spanish Irises are good and plentiful. Flowers of Gladiolus Colvillei (the pink variety) are good; there is little of the white variety in the market. Sweet Peas are now of good quality. The best market sorts are Dorothy Eckford, Miss Willmott, Princess May, King Edward VII., and Navy Blue. In Carnations the Malmaisons are now of good quality. American varieties are not quite so plentiful. Tulips of the English garden sorts are now of good qualities. The "Darwin" and 'Parrot" varieties are seen in quantities. Mignonette is of very fine quality. Supplies of Orchid flowers are more than equal to all demands, especially Odontoglossums. Cattleyas maintain high prices. The trade in the French market is almost over for the season. Flowers of good double white Stocks are now scarce, and being so much used for wreath-work, sell well, and at advanced prices. *A. H., Covent Garden, April 26.*

ANSWERS TO CORRESPONDENTS.

Address: *A. B.* Mr. S. T. Wright, Royal Horticultural Society's Gardens, Wisley, near Weybridge.

Algiers, Flora of: *Traveller.* You will find the *Flore Analytique et Synoptique de l'Algérie et de la Tunisie,* published at Algiers by Giralt, of great service to you. It is written by MM. Battandier and Trabut. The *Flore de l'Algerie* is a larger and more expensive work in four or five volumes.

American Correspondence: We have intimation that certain letters and pamphlets were despatched to us from Chicago and from North Easton, Massachusetts, on or about March 15, but these have not reached us. Enquiries will be made with a view to ascertain the cause of the omission, which we mention because it is probable that other correspondents may have sent communications and received no reply.

Ash-root: *J. M.* Destroy the root by blasting it with dynamite, unless the wall is so near that the blasting would affect it, when strong carbolic acid might be applied on the stump. This would soon eat into the wood, and you could afterwards break it up by means of a pickaxe.

Correction. On p. 245 of the last issue, in column 1, for flowers of Saxifraga Burseriana 3 inches across, read three-eighths of an inch across.

Cyclamen-corms: *R. W. R.* After flowering, the corms may be kept in their pots until they show signs of making fresh growth, or they may be planted-out into frames. We do not advise you to retain corms that are more than two years old. Younger plants usually succeed much better. Seeds may be sown at any time from August to November, in pans of loamy soil made freely porous by the inclusion of leaf-soil and silver-sand. They will germinate readily in a temperature of about 55°, and the seedlings should be put separately into small pots in the following February or March.

Freesia: *G. M.* The scrap you send appears to be a Montbretia, not a Freesia; but it was withered when it reached us.

German South-West Africa: *J. B.* Herr Dinter is expected to return to Europe very shortly. We gave his address in Saxony in our last number. Of course you are aware the country is at present in a very unsettled condition.

Hellebore Tea: *J. M.* This is made from Hellebore powder, which can be obtained from any of the garden sundriesmen. Remember it is very poisonous.

Lathyrus magellanicus: *J. B. L.* You should be able to get seeds of Lord Anson's Pea from the seedsmen. They are not expensive, but somewhat rare, because few people cultivate the species.

Lavender and Woodruff: *R. M.* Cut off the growths just before the flowers open, and spread them out thinly on shelves, or suspend them in small bunches in some sunny, well-ventilated glass-house.

Lilium candicans: *H. W.* The fungus on the leaves is one which is found on many plants of Liliaceæ, and to it have been applied at different times and on different plants no fewer than fourteen names, of which the one now usually adopted is Uromyces Erythronii. The only remedy is to cut off diseased leaves and burn them as soon as they appear, so as to prevent their attacking healthy plants. It is our opinion that the disease can never be eradicated from affected plants, therefore they are better destroyed, in order to prevent diffusion, and a little Bordeaux-Mixture distributed by spraying over other plants of Liliaceæ in the immediate vicinity would do no harm. *M. C. C.*

Names of Fruits: *Hautbois.* 1, Golden Nonpareil; 2, French Crab, generally known as Winter Greening.

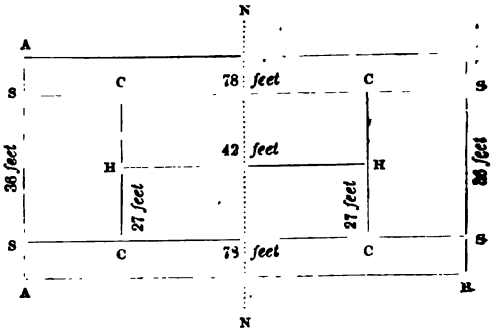
Names of Plants: *J. M. R.* Tiarella cordifolia.—*A. G.* 1, Lycaste aromatica; 2, Milla biflora; 3, Polyanthus Jackanapes; 4, Kerria japonica flore-pleno; 5, Tulipa sylvestris. —*J. F. H.* The white-and-yellow Orchid is Cœlogyne ochracea; the other, Dendrobium crepidatum.—*Haslemere.* 1, Oncidium sphacelatum; 2, Bougainvillea spectabilis; 3, Dracæna hybrida; 4, Skimmia Fortunei.—*A. J. R.* Lissochilus purpuratus, Lindley.—*Felix.* 1, Oncidium phymatochilum; 2, O. cheirophorum; 3, Masdevallia striatella; 4, Bulbophyllum densiflorum; 5, Ada aurantiaca; *H. R., Norfolk.* Bifrenaria Harrisoniæ (often called Lycaste Harrisoniæ).—*H. C.* Billbergia nutans.—*J. W. A.* 1, Diacrium bilamellatum; 2, Epidendrum floribundum; 3, Adiantum decorum.—*Lea Ross.* Zephyranthes tubispatha. *A. J. S.* A form of Odontoglossum triumphans. —*A. F. P., Cornwall.* Dendrobium Pierardi.—*M. J. O., Wolverhampton.* Primula denticulata cashmeriana.—*Grateful, Salop.* 1, Anthurium crystallinum; 2, Dendrobium chrysotoxum; 3, D. Pierardi; 4, D. nobile. The Rose appears to be Rosa L'Idéal.—*E. Abbott.* Ornithogalum nutans.—*Constant Reader.* 1, King of Violets; 2, Admiral Avellan; 3, Princess of Wales (small flowers).—*A. C.* 1 and 2, Cupressus Lawsoniana; 3, C. nootkatensis; 4, Sequoia gigantea (Wellingtonia). —*R. N. U.* 1, 2 and 3, varieties of Odontoglossum × Andersonianum; 3, a very pretty variety; 4, Odontoglossum Hunnewellianum.—*V. H.* 1, Polystachya luteola; 2, Megaclinium falcatum; 3, Maxillaria variabilis; 4, Stelis micrantha; 5, Masdevallia simula.—*A. G. F.* 1, probably Prunus Padus, send again when in flower; 2, Leucothoe floribunda; 3, Amelanchier canadensis; 4, Cydonia japonica; 5, Rivina humilis; 6, Hippeastrum reticulatum; 7, Rhœo (Tradescantia) discolor; 8, Spathiphyllum cannæfolium (syn. Anthurium Dechardi); 9, Fittonia argyroneura; 10, (broad-leaf) Chlorophytum elatum variegatum; 10, (narrow leaf) Liriope striata; 11, Mesembryanthemum species; 12, Staphylea colchica; 13, S. pinnata; 14, Saxifraga sarmentosa variegata. You have much exceeded our rules. A small contribution to the Gardeners' Orphan Fund would serve to absolve you.—*Japonica.* 1, Maranta Makoyana; 2, Phalænopsis amabilis, often called P. grandiflora; 3, Dendrobium parcum; 4, D. dixanthum.—*W. H.* Acer platanoides, Norway Maple.—*A. G. S.* Cydonia japonica, certainly, but we are not able to name the variety. Consult some nurseryman.—*H. N.* 1, Cupressus Lawsoniana; 2, the golden form of the Irish Yew; 3, Cupressus Lawsoniana aurea; 4, C. L. erecta viridis; 5, Cupressus Lawsoniana, silver variegated form; 6, Juniperus communis.—*J. S. U.* Amelanchier canadensis.—*D. R.* Narcissus Autocrat, of the Incomparabilis section.

Peach House: *F. B. S.* On bright mornings at this season, eight o'clock or half-past eight will be sufficiently early. The house may be syringed and closed in the afternoon after three o'clock on any day, and generally it might be done earlier with safety. As the days increase in length, and the sun becomes more powerful a little air may be again admitted to the house one hour or so after the syringing has been done.

Pelargoniums: *D. A. T.* The leaves have been scorched by the sun when wet. Ventilate more freely.

Richardia Flower: *T. P.* It is not at all uncommon for the plants to produce twin spathes. As your plant has behaved similarly for three years in succession you may still watch it with interest. Attempts have been made to "fix" the characteristic, but so far as we know without success.

Tennis Lawn: *Constant Reader.* The following diagram (reproduced from *The Calendar of Garden Operations,* published at this Office, price 7½*d.* post free), will illustrate the amount of ground required for a double court, and the lines that are usually made and kept:—



The lines A B and B A, indicate a double court for three or four players, S S, S S, a single court for two players; A A and B B are the base lines; C C and C C, service lines; H H, half-court line; N N, net. A court for the single game is 27 feet wide and 78 feet long; and for the double game, 78 feet long and 36 feet wide. The posts for supporting the net should be placed 3 feet beyond the sides. The service lines run parallel to the net, and are 21 feet distant from the same. The net should be 3 feet high in the centre, and 3 feet 6 inches at the posts, which are put 2 or 3 feet outside the line, to allow of the net dropping. When the outside measurements have been taken, and a line drawn straightly and tightly, it may be marked with the machine made for the purpose, or by the use of a whitewash brush, and a solution of whiting, lime, and water. The machine is better, because by its use it is easier to obtain perfectly straight and thin lines. Both Messrs. Sutton, of Reading, and Messrs. Carters, 237, 238, High Holborn, publish small pamphlets on the management of lawns and bowling-greens. For names of Violets, see under "Names of Plants."

Tomato Leaves: *J. H. A.* The leaves were too much wilted and knocked about to make certain of anything in regard to them. There is no appearance of fungus upon them, but the foliage is not in a condition to give a decided opinion upon, as superficial mould may have been wiped away. Send fresh specimens.

Tulip Bulb: *C. M. L.* Affected by a parasitic fungus, Sclerotinia parasitica. Burn all affected plants at once.

Vines: *W. H. S.* Your Vines are affected with "browning," a disease of mysterious nature and origin. Cut away and burn all affected shoots, and maintain as healthy a condition as regards ventilation and heat as you can.—*J. G.* We are sorry to say the cause of browning of Vines, a destructive malady, is still a matter of doubt. It was at one time considered to be due to a slime-fungus, but that view has, we believe, been disproved.—*A. S.* Your Grapes are affected with "spot" caused by a fungus. Burn the affected bunches, and spray the healthy ones with liver-of-sulphur, ½ oz. to 1 gallon of water.

Wallflowers: *A. R.* The injury is due in the first place to a pith-boring maggot that lives in the stem during the seedling stage of the plant. The production of numerous crowded branches is a sign of this injury, and if the stem is split down the maggot may be seen. Such plants do not die at once, but during the second year few or no blooms are produced, and the plants gradually die and the dying portions are attacked by various fungi. It would be well to raise seedlings for some time to come in a totally different portion of the garden.

Communications Received.—B. Chabaud, Toulon—E. A. B.—J. H. V.—H. R. W.—T. & Co.—G. S.—Vine Perplexed—E. J. W.—Reader—E. F. C.—R. E.—W. J. R.—E. L.—A. K.—A. B. H.—G. R.—S. F. P.—C. W. P.—E. W.—W. W. P.—H. W. W.—W. A. M.—W. W.—Sec., Board of Agric. and Fisheries—W. P.—J. B. W.—E. C. C. D—L. F.—W. Marshall—J. C.—W. P. R.—C.P.R.—F.M.—S.A.—A. D.—F. J.—J S.—G. B. M.—W. R.

(For Weather see p. xii.)

THE
Gardeners' Chronicle

No. 958.—SATURDAY, May 6, 1905.

CONTENTS.

Academy, pictures at the Royal 273
Apiary, the 285
Apple stocks, raising 284
Apples at the present season 284
Apples, seedless ... 281
Auriculas 276
Books, notices of—
Familiar Wild Flowers 283
Insect Life 279
Orchids and their Cultivation in Apartments ... 277
Publications received 283
The Culture of Sweet Peas 283
Building trades exhibition, a 281
Carnation "Elizabeth" 285
Cucumber "spot" disease 284
Currant-bud "mite," the 284
Custom, a curious ... 282
Cypripedium Fairieanum 274
Flowers in season ... 282
Flowers, ruthless destruction of 281
Fruit-growing, a conference on 281
Garden cities 283
Growths, anomalous, as a result of wounds 280
Kew, Orchids at ... 283
Kingswood, Sydenham Hill 283
Market gardening in the Midlands ... 275
Mosquito plant, a reputed 282
Nursery notes—
Treseder & Co., Truro 285
Odontoglossum × Thompsonianum ... 285
Orchid notes and gleanings 274
Orchids, sale of, at Bank House 280
Orphan Fund, Royal Gardeners' 281
Potatos 284
Prince's Restaurant ... 282
Societies—
Croydon Flower Show 286
Gardeners' Debating 286
Royal Horticultural 280
(Scientific Committee) 286
Surveyors' Institution 280
Tacsonia mollissima fruiting in the open 284
Tulipa suaveolens and T. præstans 275
Vine, the Hampton Court 282
Week's work, the—
Flower garden, the 279
Fruits under glass... 279
Hardy fruit garden 279
Kitchen garden, the 279
Orchid houses, the 278
Plants under glass... 278
Wisley Gardens in spring 276

ILLUSTRATIONS.

Asters, China, a bed of 277
Carnation "Elizabeth" 285
Daffodils and fruit-trees in spring-time 275
Odontoglossum × Crispo - Harryanum "King Edward" 276
Odontoglossum × Thompsonianum 285
Odontoglossum × Wiganianum 274
View of an ornamental bridge at Kingswood, Sydenham Hill (Supplementary Illustration)

ROYAL ACADEMY.

THERE is a remarkable falling-off in the number of pictures of floral subjects at the Royal Academy this year; in some of the rooms there is none, in others only one, or at most two. There are a few paintings of flowers amongst minor works, and a few others, as usual, amongst the water-colours. There are practically no "impressionist" flowers this year, no shadows, no "symphonies" in anything. Pictures by ladies who only paint "what they can see" are absent. The floral world to them is very often a mix-up represented by atrocious drawing and foggy daubing. How easy it is to become a floral "impressionist," how difficult—so it would seem—to achieve draughtsmanship worthy of the name, and represent colour which is not a libel on Nature! The *Gardeners' Chronicle* here begs leave to thank the Hanging Committee for ousting the army of floral incapables.

Of garden scenes there are but few; of landscapes, views of woodland, pasture, hill, and stream there are many. Those by practised and well-known men at once arrest attention; the majority are middle-rate, indifferent—pictures to glance at and pass on without remark, pictures one has seen hundreds of times before, and hopes—perhaps in vain—never to look upon again.

It requires a very long day to walk through and note the chief pictures in the many galleries of the Royal Academy, and not a tenth part of the exhibits can even be mentioned by name in any journal. As space is valuable in this paper, all that can be done is to record a walk through the rooms, and mention a very limited number of pictures more or less relating to horticulture. Many works worthy of notice must through exigencies of space be omitted.

We start in GALLERY I., and taking the pictures in numerical order, the first we note is 36, *Chrysanthemums*, M. Cathelin Ludovici, an excellent picture of Chrysanthemums, with berried Holly and Ivy. 50, *The Farm Gate*, H. W. B. Davis, R.A., a fine spring-time landscape. 54, *A Morning in June*, George Clausen, A., an excellent piece of work, quite out of the ordinary run of landscapes, and powerfully new in treatment; one has not seen the like of it before: observe the perfection of the perspective in the clouds.

GALLERY II.—There are no flower subjects in this gallery. 79, *Sunshine and Shower on the South Coast*, B. W. Leader, R.A.; everyone knows Mr. Leader's extraordinary facility in landscape; this is a coast scene, with sea-holly in the foreground. 118, *Fruits of the Earth*, C. E. Perugini, a truly beautiful picture of a lovely girl carrying Peaches, Figs, and Grapes. 119, *Flowers of Alsace*, R. W. Macbeth, R.A., and the beautiful 121, *The Brimming River*, and *The Arun at Houghton*, R. Vicat Cole. 126, *The Happy Island of Salahat — "Sinbad,* (sic) *in his sixth voyage, relates his adventures to the Sultan*, Albert Goodwin. This is a fairy-like picture of Palm trees and Almond blossoms in Mr. Goodwin's well-known manner. There seems to be a lack of foreground to the picture. The name is painted correctly on the frame—"Sindbad," not "Sinbad," as in the catalogue. 172, *The Silvery Thames*, another of Leader's familiar works. 198, *The Black Mountains*, J. Aumonier. A good and faithful representation of these well-known hills, as often seen by the writer and other members of the Woolhope Club. 212, *The Finding of Moses*, Sir L. Alma-Tadema, R.A. This picture will be viewed with mixed feelings; it exhibits all the artist's unrivalled power of drawing and painting, his archæological knowledge, and his faithful attention to details; there is no daubing and smudging, and fudging over difficult parts, all is accomplished and perfect—gilt finger-nails, green line painted under the eyes, rings for finger and toe, musical instrument, Figs, Larkspurs, and last but not least, the very pronounced black-haired Hebrew child. This last is clearly a portrait; the original must have been sought and waited for. The cradle, supported on the left shoulder of one woman and the right of another, is curious. Could a cradle be so carried? The large collection of Larkspurs is remarkable; there is no rest for the tired eyes; artists belonging to other schools than that of Alma-Tadema will not altogether like the picture.

GALLERY IV.—250, *In a London Garden*, E. Margaret Woolhouse. A very good study of single Hollyhocks reduced in scale. 255, *The Tithe Barns*, David Murray, R.A. Elect. A very pretty rustic subject. *Swedes*, David Murray, R.A. Elect. A field of Swedes, undoubtedly a trying subject; amongst the Swedes are two kicking horses, a dog and apparently a dancing lunatic; a good picture, but peculiar. 258, *The Passage Perilous*, Sidney Paget. A knight on horseback with shadowy morris-dancers or something of that class. 334, *Early Morning in the Cotswolds*, Alfred East, A. A beautiful landscape, low in tone.

GALLERY VI.—366, *Bridesmaid Roses*, Florence W. Whitfield. This picture is a good one. It is both well drawn and coloured, and represents a group of Roses in a glass vase. 369, *An Unfinished Symphony*, Chas. M. Q. Orchardson. This represents a fiddler, fiddling before an unfinished portrait of a lady, with a child listening. The picture is well executed; but how it can be a "symphony" we do not know. There is usually a full band for a symphony, and sometimes the human voice is added. The fiddler may, indeed, be singing, but as his back is towards the observer it is difficult to say. We accept it as a "symphony" on a minor scale; certainly it is not an "impression."

Up to this point we were in despair as to floral pictures, but in GALLERY VII., under 421, the catalogue gives *Poppies*, Eisman Semenowski. The picture represents a reclining Turkish woman and a cockatoo! There is a mistake somewhere. The artist's name is peculiar; his handwriting may be the same, and the word he wrote may not really have been "Poppies." We turned away disappointed. Reclining on one of the luxurious seats, we directed our glasses to every recess of this gallery without discovering "Poppies." 458, *Flora's Bower*, Robert Christie. This can hardly be the Roman Flora. The picture represents a number of partially-clothed and plain-featured young women trespassing amongst growing Rhododendrons; Flora (really a twentieth-century young girl) is entirely nude—one does not usually see the Roman Flora so pourtrayed. A boy with blue wings is descending head-first from the sky to salute Flora. 459, *Trafalgar*, 2.30 *p.m.*, *October* 21, 1805, W. L. Wyllie, A. This is one of Wyllie's large masterpieces, with representations of the old fighting ships of the past; every ship is named on the frame—a picture to be carefully examined and studied. 472, *Moorland, Dorsetshire*, Arthur Hopkins. A finely-executed piece of work, with Heather introduced with good effect. 473, *Lincoln Cathedral from the Castle Hill*, William Logsdail. A Canaletto-like picture, very photographic and correct. In the cathedral itself the pinnacles are not set correctly on to the turrets, as the writer well knows, as he was once commissioned to draw this front of this cathedral. We are delighted to see the turrets are in this picture as they in fact really are. The painting is, however, cold, unsympathetic, and without atmosphere.

GALLERY VIII.—485, *The Incoming Tide on the Cornish Coast*, B. W. Leader, R.A. An impressive picture of sea and rocks. 510, *An Ode of Pindar*, Isaac Snowman. A picture with an Alma-Tadema frame and a representation of an Alma-Tadema stone seat; the figures and faces are, however, not those of Alma-Tadema, and it is difficult to say in what manner the picture is Greek; there is, however, a Greek vase with red figures on a black ground. 527, *Theseus returning* *to Ariadne*, W. E. Gladstone Solomon. Theseus, much flustered and evidently bent on mischief—a picture well worthy of study. It is a relief to turn to 532, *The Ploughman's Breakfast*, November, George Clausen, A. The picture represents the border of a field with a pasture in the distance; the light of early winter morning is given with marvellous effect; in the foreground are ploughmen sitting at breakfast, beside them are horses and a plough, speckled with the rays of the rising sun. 545, *The Bride*, Fortunée de Lisle. A bride in an Alma-Tadema frame carrying white flowers of an uncertain natural order.

GALLERY IX.—This is a room of small pictures in which are a few floral subjects. 552, *The Flowers of Spring*, James V. Jelley. A long horizontal strip of Primrose blooms without leaves and with Blackthorn blossoms behind well done. 572, *Westminster Abbey and School from Dean's Yard*, Ælfred Fahey. Turn for a moment and compare this beautiful picture with its grace and atmospheric effects with 473, *Lincoln*, which has none of these qualities. 583, *A dry Pump*, Sydney Hayes, is really the head of a donkey, lovingly painted. 598, *Mushrooms*, Emily Stanton. The true pasture Mushroom, not the indigestible dung-heap form; very truly represented. 618, *Fleurs et Fruits*, Arthur Chaplin. Hops, Plumbago, Nuts, Campanula rotundifolia, Medlar, Zinnia, Grapes. Why should the name be in French, English is good enough for the assortment before us, which is very well executed. 638, *Roses*, Margaret Cornish, appears to be a good piece of work, but it is placed too high to be properly seen. 648, *The Nineteenth of April*, E. T. Sutcliffe. Another useful, long, horizontal strip of Primroses, this time with leaves. For some occult reason a reel of white cotton has been added to the picture. 651, *Building the "America" at Harland and Wolff's*. Robert P. Staples; 651 is really a picture of lambs, flowers, and a spirit-child; we cannot find this subject in the catalogue. 658, *A Labor of Love*, Henry E. Crocket, is a picture of a young lady engaged in the task of painting Chrysanthemums. 693, *Autumn Roses*, Catherine A. Lilley. Very well drawn and painted.

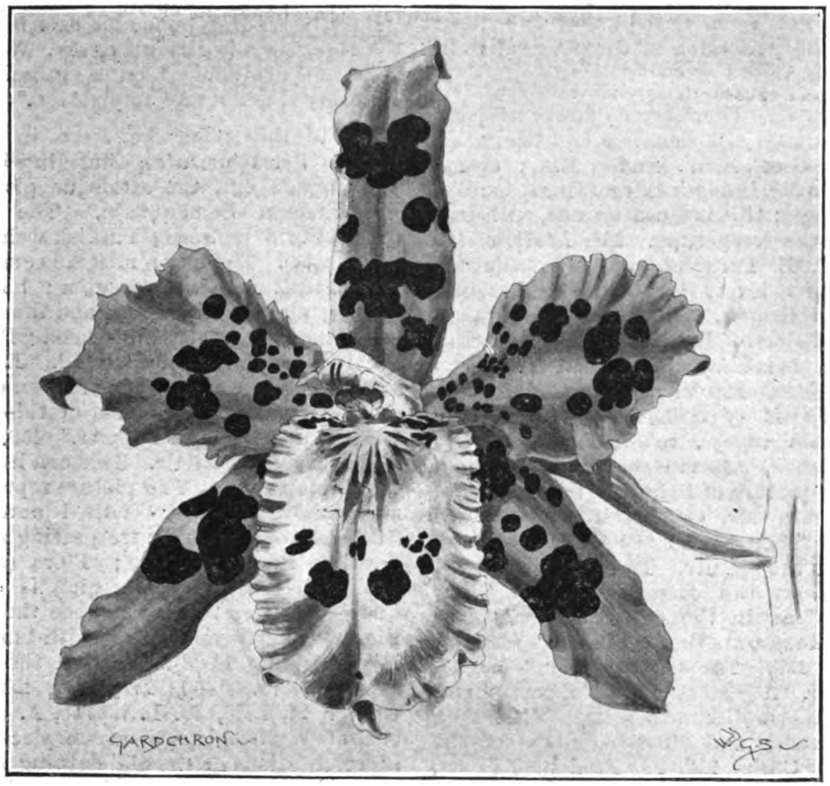


FIG. 112.—ODONTOGLOSSUM WIGANIANUM × : COLOUR OF FLOWERS BRIGHT YELLOW WITH BROWN MARKINGS.

Awarded a First-Class Certificate at a Meeting of the Royal Horticultural Society when exhibited by Sir Frederick Wigan. (See Report on page 236 of our issue for April 15.)

GALLERY X.—753, *Irises*, Louisa G. Chapman, appears to be a well-executed picture of dark Irises on a dark background, but the work is placed too high to be properly seen. 831, *They'll Want us Again*, Alfred W. Strutt Four horses are supposed to be saying this; they are looking at and speaking about a damaged "road-hog," from which two real ladies and a gentleman have alighted. A large number of motors at lightning speed rush by our house night and day at Dunstable, close to Markyate; we have observed them for two or three years, and we have never seen ladies and gentlemen in them! 843, *Chrysanthemums*, R. Willes Maddox, a well-executed study of colour.

At last we arrive at the "Water Colour Room"—it is a "room" only, not apparently worthy of the name "gallery." Here one always finds flowers, sometimes very indifferently represented, but such is not the general quality this year; the Hanging Committee has severely winnowed out the chaff. 857, *Roses*, Clifford Toft, fairly good. 870, *Summer Jewels*, Jessie M. Silvester, a well-executed group of Sweet Peas. 893, *Christmas*, Woodhouse Stubbs, Hellebores, &c., well drawn and coloured. 903, *The Wealth of Summer*, same artist. Roses and Grapes. 920, *Water-Lilies and Poppies*, William J. Muckley. Everything this artist produces is of the first class. 942, *A Study in Silver and Gold*, Edith A. Tye, a very good study of Honesty and Helichrysum. 969, *Fleurs de Printemps*, Antoinette Chavagnat, Pæonies, too high to be properly seen. 996, *Spring*, Woodhouse Stubbs, Pansies, remarkably good both in drawing and colour. 1017, *Flowers of the Wood*, G. G. Simpson, Bluebells and pink Lychnis, but some parts so shadowy as to represent nothing. We now arrive at the end of our task with 1023, *Heralds of Spring*, J. Jessop Hardwick. Primroses, early Orchis, and the everlasting bird's-nest. Now this is too bad! For more than fifty years we have . . . . .

"I expect you are glad, sir, that your day's work is done," said one of the obliging attendants. "Yes, certainly I am," was the reply, "but—*which is the way out?*" *W. G. S.*

ORCHID NOTES AND GLEANINGS.

CŒLOGYNE NITIDA AND THE VARIETY ALBA.

FLOWERS of the typical form and of its rare albino are sent us by C. J. Lucas, Esq., Warnham Court, Horsham (gr., Mr. Duncan), who says that the plants were brought by a friend from Burma. The typical form has yellow and orange coloured markings on the lip, but in the other, which is entirely pure white, there is not a trace of colour. The late Professor Reichenbach once described an albino as Cœlogyne ocellata Boddaertiana, and which was probably similar to that now flowering with Mr. Lucas.

CYPRIPEDIUM FAIRIEANUM.

In view of the interest aroused by the re-discovery and re-introduction of this plant, it may be of interest to reproduce the original description by Dr. Lindley, which appeared in the *Gardeners' Chronicle* for October 31, 1857, p. 740. This was the first time the species was recorded.

"C. foliis loriformibus concoloribus apice obliquis apiculatis; scapo piloso; bracteâ brevi pallidâ apiculatâ; ovario glanduloso piloso; sepalis glanduloso-pilosis, dorsali erecto subrotundo apice recurvo, antico breviore concavo oblongo obtusissimo; petalis lanceolatis obtusis decurvis reflexis margine crispis et basi intus fimbriatis; labello sepalo antico duplo longiore glabro oblongo basi convoluto; stamine sterili lunato proboscideo piloso margine antico utrinque unidentato.

An exquisitely beautiful little species in the way of C. insigne, than which the flowers are much smaller. The leaves are narrow and whole coloured, the bract pale green, the ovary deep purple; the back sepal white, richly veined with green and crimson, the petal pale green with a rich purple crisp edge; the lip dull dirty green. It seems nearest to C. superbiens of Reichenbach, but is much smaller in every part, has no warts on the involute sides of the lip, is quite differently coloured, and has a long proboscis-like appendage arising from the middle of the concave side of the crescent-shaped sterile stamen.

It was shown at the late exhibition of the Horticultural Society in Willis's Rooms by Mr. Fairie, of Liverpool, an enthusiastic collector of Orchids, who we think may fairly claim the union of his name with that of the vegetable gem before us."

Living plants have now been received at Kew, where we lately had the privilege of seeing some of the leaves and a scape. The specimens of cultivated plants, dried at various times and preserved in the herbarium, are interesting as showing the gradual diminution in the size of the leaves, &c., as compared with that of the earlier specimens.

BULB GARDEN.

TULIPA SUAVEOLENS AND T. PRÆSTANS.

THERE is a growing tendency to consider Tulipa præstans, recently introduced from Bokhara, which received the Royal Horticultural Society's Award of Merit on April 7, 1903, as identical with the older T. suaveolens (Roth.), figured in the *Botanical Magazine*, t. 839. I have had an opportunity of closely comparing many individuals of each species, and I find differences that should do something to settle the question as to whether the two plants are distinct or not.

T. suaveolens has glaucous and hairy leaves, the largest ovate-acuminate, 6 inches wide, 12 inches long, the smallest lanceolate, 6 inches long, and they have a narrow but distinct brownish cartilaginous margin throughout. Flowers 2—3, borne on stems 12—18 inches high; segments ovate, crimson-scarlet, all equally about 4 inches long, the three outer flushed grey externally, leaving only a marginal crimson colouring, the three inner flushed grey at the bases only externally. Filaments ½ inch long, cylindrical, slightly compressed, coal-black. Anthers ashen grey, ¾ inch long; capsules an inch long when the flower first opens.

T. præstans has glaucous, hairy, ovate-lanceolate leaves, generally longer and narrower than in T. suaveolens, and without the brown margins. Flowers 2 to 3, not flushed grey externally, save for a little at the extreme bases of the segments. Segments ovate, orange-scarlet, all equally 4 inches long. Filaments club-shaped, suddenly dilating at the junction with the anthers, vermilion coloured, one-third of an inch long; anthers one-quarter of an inch long, tinted bronze; capsule half an inch long in the perfect flower. The flowers are produced regularly ten to fourteen days before those of T. suaveolens.

The bulbs of the two plants present no difference. Just as the buds are piercing the soil T. præstans displays its orange-scarlet colouring as rich as in the perfect flower. T. suaveolens shows greenish-grey buds.

T. præstans I think the better plant of the two. Its self-colouring is more attractive than the greyish flushed flowers of suaveolens, and its vermilion filaments lend additional depth of colour to a glorious flower, whereas the black filaments of T. suaveolens seem to detract from the petals' colouring. I think there may be a doubt as to their being distinct specifically, but horticulturists will value T. præstans the more for its refined colouring, earliness, and greater brilliancy, and it should rank as a well-marked variety of T. suaveolens. *G. B. Mallett, Colchester.*

WATSONIAS.

These are lovely flowering bulbous plants having Gladiolus-like flowers, but quite regular. Among those in gardens are W. rosea, W. r. alba, W. Meriana, W. humilis, and the very pretty, white-flowered W. Ardernei, shown by Messrs. G. Jackman & Son, of Woking, at a recent meeting of the Royal Horticultural Society. The flower-scape is branched, and the inflorescence is in consequence less stiff than that of the Gladiolus. I do not know of any attempt having been made to cross the two genera (Watsonia and Gladiolus), choosing either species or hybrids for forming the crosses. Such a cross would seem to promise quite a new race. *F. M.*

"THE TROPICAL AGRICULTURIST."—The new series of this useful periodical, now edited by Dr. J. C. WILLIS, whilst losing none of its utilitarian character, is rendered more comprehensive by original notes on cultural matters and natural history. Naturally much space is occupied with rubber cultivation. It is still published by Messrs. A. M. & J. FERGUSON.

MARKET-GARDENING IN THE MIDLANDS.

VERY few districts in England are more fertile than the Valley of Evesham, beautifully watered by Shakespeare's Avon, and at this time of the year, when the hedges and trees are bursting into leaf and the fruit-trees are white with blossom, it is perhaps most beautiful. Acres and acres of garden-land are bright with Narcissus and Daffodil blooms. As the area of the cultivation of fruit is extending in the Vale the spectacle of the trees when in blossom each year becomes more beautiful. This spring it was seen at its best, and many people from the large towns took advantage of the excursions arranged to witness the sight. Now the leaves are developing and are not only toning down the snow-white effect, but also protecting the delicate fruit. The Plum blossom has been exceedingly good, and notwithstanding the fact that there was a heavy crop of fruit last year, present appearances indicate another abundant yield. Much anxiety has been caused the gardeners recently, when there was every appearance of a spell of severe weather, such as was experienced in the season of 1903, which proved so disastrous to the fruit-growers. On the morning of April 15 nearly 5° of frost were registered, and it was feared that the crop had been considerably thinned; on examination, however, it was found that little damage had been done to the blossom. It is too early to give an estimate of the probable yield, but from present appearances Pershore Plums seem to promise a fair crop; Damsons and Czars are scarce in places; Prolific, Early Orleans, and Victoria Plums are very promising. From some cause or other the blossoms fell off some of the trees almost as soon as they opened. Enquiries have elicited no satisfactory reason for this, but it is suggested that birds in quest of insects of some kind or other broke the blossoms off, and as this occurred in the stalk, it meant the loss of a Plum. The Prolific or Czar seems to be the chief sufferers in this respect.

A new Plum called The Heron is coming rapidly into favour with growers. This resembles the Victoria somewhat in shape, colour and size, but it is a better "carrier," and will keep much longer. To give an idea of the demand for this variety, it may be mentioned that fruit stocks have realised unusual prices, while single grafts have been making a penny each.

Apples promise but a partial crop, and this is not surprising, considering the extraordinary crop last year. Bush fruits promise well, especially Gooseberries, though some of these are being badly attacked by red-spider.

"Gilly" or Wallflowers are always grown extensively in the Evesham district, and one cannot describe the delicious scent experienced when passing a large plot of them, while their dark crimson blossoms are beautiful. It is the aim of the Evesham gardener to eliminate all the yellow blooms, and those of the darkest hue are cultivated exclusively. These flowers, which last year only met with a moderate sale, have this season realised good prices.

VEGETABLES.

Green Onions, the tying and washing of which employ many hundreds of women, have sold remarkably well. There has also been a good demand for "green stuff" of all kinds. Cabbages are being cut plentifully, but owing to the fact that the gardeners are anxious to be first on the market and get this vegetable out of the way before Asparagus appears, they are being cut too early, in fact, before the "hearts" have properly formed. This results in a poor price being offered, and even though the quality improves later, the price will not afterwards rise.

Radishes are largely cultivated in the Vale, particularly by owners of land which belonged to the monastery in the time of Henry II. This land is wonderfully productive, being well watered, and sheltered from cold winds and frosts. The gardeners have a superstition that the bodies of the monks buried here fertilise the crops! Lovers of Asparagus will be glad to learn that a supply is already on the market, though in small quantities. The quality at present is only moderate, and prices have ranged from 2*s.* 9*d.* to 3*s.* 9*d.* per 100 "heads." It is expected that good prices will be obtained throughout the season, as the quality of the Asparagus grown in the Vale shows improvement every year. London buyers are beginning already to take up their residence in Evesham, where they remain until this vegetable is over, for the sole purpose of buying supplies for their own firms.

Lettuces are a thin crop in places, though they

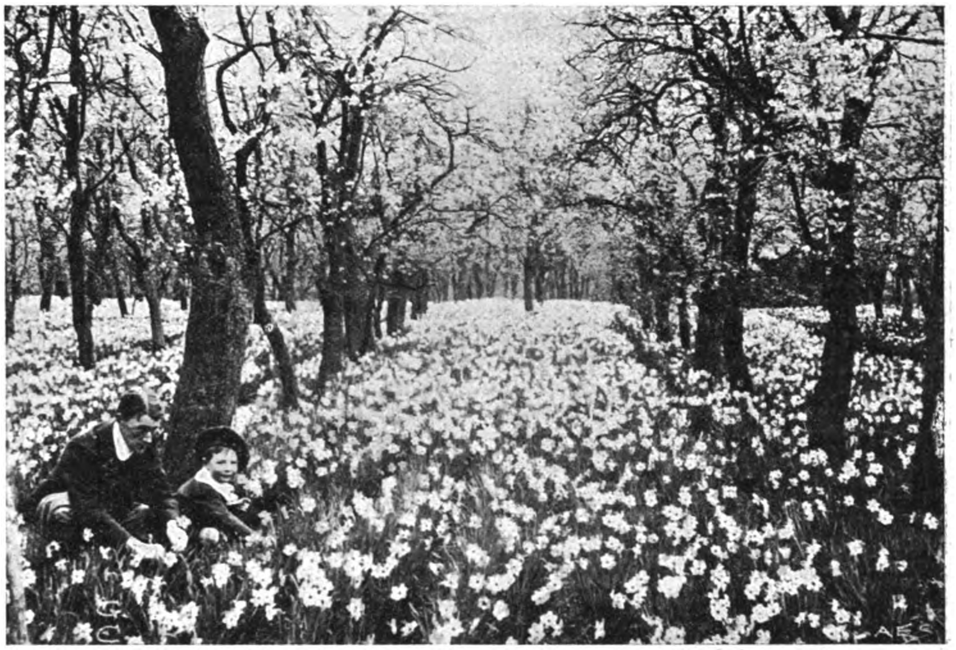


FIG. 113.—FRUIT TREES IN BLOSSOM OVER NARCISSUS AT EVESHAM.

are coming in well now, but only making from 1s. 6*d*. to 1s. 8*d*. per "pot." The gardens for growing this salad on the French system are hardly complete, still, one grower is making his glass pay admirably, and has now a supply of produce on hand to last till next February.

Owing to the dry season experienced last year, the land is now in better condition than it has been for some fifteen years past, and this argues well for the crops. All spring produce has done exceedingly well, and good prices have been maintained throughout. Evesham is not behindhand in anything connected with gardening, and when a contingent of gardeners visited Paris in February last they found that where they learnt one thing they might teach their foreign neighbours two! *Correspondent, April 20.*

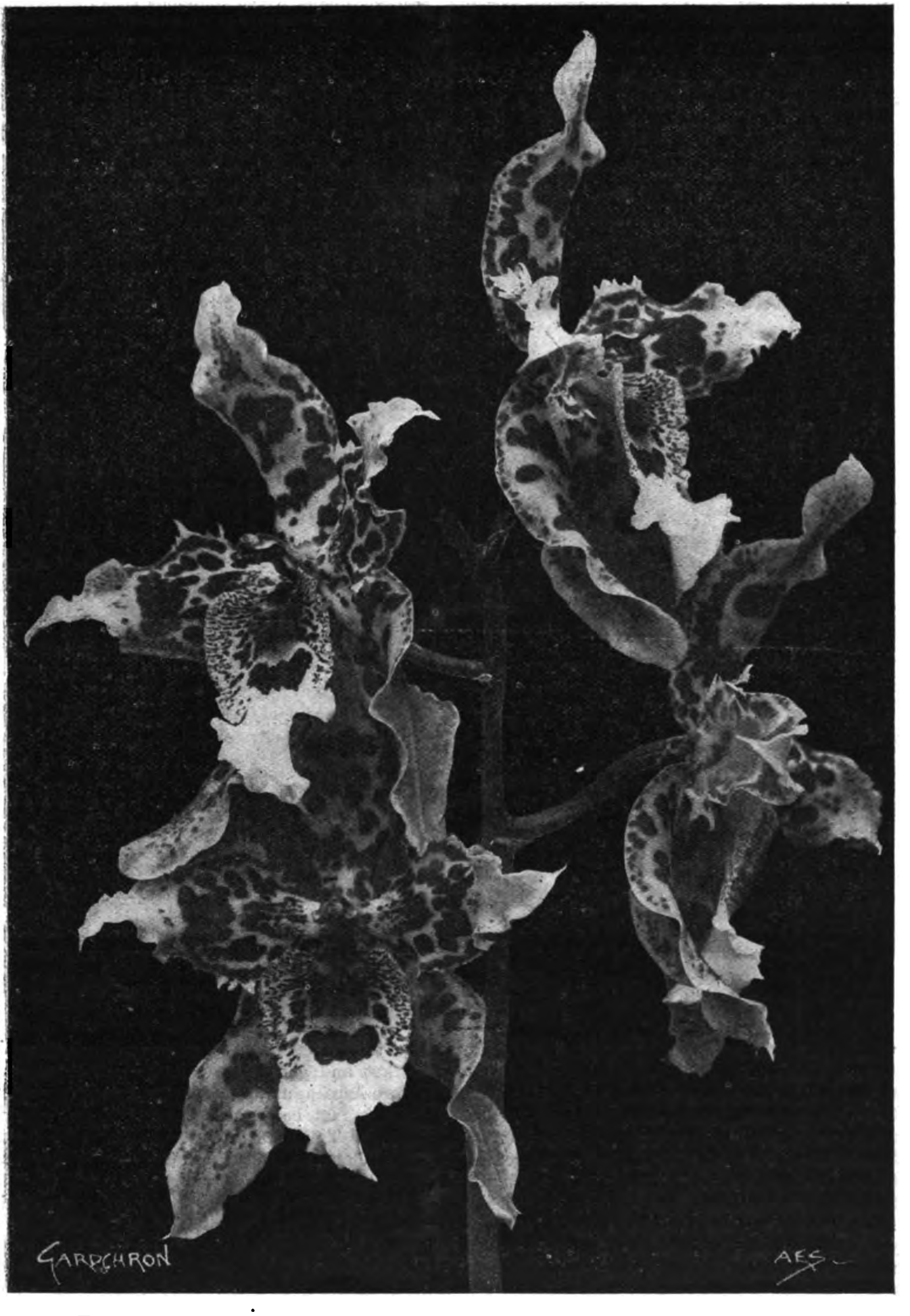


FIG. 114.—ODONTOGLOSSUM × CRISPO-HARRYANUM "KING EDWARD": FLOWER CREAMY-WHITE, BLOTCHED WITH ROSY-PURPLE COLOUR.

Shown by Messrs. Sander & Sons at the Royal Horticultural Society's Meeting on April 11, 1905. (See Report on page 236 of our issue for April 15.)

FLORISTS' FLOWERS.

AURICULAS.

It is generally noticed that immediately following an exhibition of Auriculas some persons are led to attempt their culture, though their knowledge as to the management the plants require is often very limited. Such persons should make a commencement with low-priced, named varieties, of which there is a good selection, and then having succeeded with these they can gradually enrich their collections with more valuable and newer varieties. If certain conditions are observed, success may be reasonably anticipated. There should be a suitable frame or house in which to grow the Auriculas. A start should be made with healthy, vigorous young plants. The ground or stage upon which the plants are to stand, whether in the form of an ash-bed or of wood, should have provision for water freely passing away. The plants should be potted so that the lowermost leaves may rest upon the soil, as the plants will put forth roots from the axils of these leaves. The drainage at the bottom of the pots, of whatever material it may be formed, should occupy one-fourth of the inside depth of the pots. Over-potting should be guarded against—3-inch pots for small plants, 4-inch and 5-inch pots for larger ones, if well rooted. There should be free ventilation in fine weather, whether of house or frame. The plants should never be watered when the soil is moist about the roots; before water is applied the soil should be of such a porous character that water can quickly pass through it. Winter and summer alike the plants should be in soil sufficiently moist to maintain their vitality. A sodden soil is dangerous to the plant. Plants die from wet-rot and also from dry-rot. Obtain a proper compost in which to grow the plants, and afterwards afford them the constant attention they require, success in cultivation may then be confidently looked for. *R. D.*

THE WISLEY GARDEN IN SPRING.

To those who feared that members of the Royal Horticultural Society would not travel to Wisley, it will be a surprise to learn that more members are attracted there than were induced to visit the old garden at Chiswick in recent years. The arrivals by motor-car and carriage are increasing rapidly, especially on Saturdays, and Weybridge and its neighbourhood are waking up to welcome this fresh centre of interest. Residences of a moderate size are being erected about half a mile from Weybridge, and land has been laid out for building along the main road, but not so near to the gardens as ever to threaten to interfere with their amenity.

I visited Wisley in typical Easter weather, but in spite of the bracing air the nightingales were audible in the bushes about the wild garden. They were heard on April 12, two days earlier than last year. The wood-wren and other warblers were noticed flitting about and singing as though spring had really come, and I have since wondered what can have become of the tender creatures during the recent fall in the temperature. The "wild garden" is however much sheltered, and birds and flowers have, I hope, escaped injury. The plenteous Oak-leaves are never gathered up, and as they decay excellent leaf-mould is formed, and during the process the crowns and bulbs of lowly flowers are sheltered from the frost and cutting winds. To those who love a wild garden, many useful hints can be obtained at Wisley. All that the late Mr. Geo. Wilson did there has been religiously respected, and the same objects and system are being intelligently carried out.

His bird-boxes were, I was glad to see, occupied by his "feathered friends," and one could not stand still a moment without hearing the rustle of some small creature hidden in the bushes. Flowering trees and shrubs this year are more forward at Wisley than in the suburbs of London, and the ground was bright with a great variety of spring flowers. One meets with many surprises at Wisley. The double-flowered variety of Arabis albida "Snowdrift" fails totally in some localities where the single variety thrives, but at Wisley it greatly surpasses the single form in every respect. Narcissus maximus, which is doubtful in some places, here succeeds admirably, being very free and bright. The deep yellow colour is unsurpassed if equalled by any other Narcissus, and its form is superb.

Dog-tooth Violets growing in deep leaf-mould under an Oak, sheltered from north and east but exposed to the south, were never seen in such perfection before. The flowers were large, unsoiled, and varied in colour, being white, rose, lilac, and yellow. Trillium grandiflorum growing near was equally at home. Also white Oxalis, Viola biflora (yellow), a very free-flowering Anemone apennina, Narcissus "Angel's Tears," and other beautiful Narcissi in groups and informal lines. At an unexpected turn a long bank of Daffodils reminded me of Wordsworth's exquisite lines. The flowers were tossing their golden heads in the sunlight and breeze just as he described. Probably the late Mr. Wilson had the lines in his mind when he formed the long bank and planted the Daffodils with lavish hand. I fancy that in his later days he could say—

> "For oft when on my couch I lie,
> In vacant or in pensive mood,
> They flash upon that inward eye
> Which is the bliss of solitude;
> And then my heart with pleasure fills,
> And dances with the Daffodils."

Lilium auratum, L. giganteum, and other species were growing vigorously, some in partial shade, which seems favourable to them. Colchicums were in vivid green, showing the seed-pods of their autumn flowers amidst their luxuriant foliage. Anemone nemorosa Robinsoniana and Iris tingitana were blooming in perfection. As I passed over a little rustic bridge the sweet-scented Cape aquatic Aponogeton made itself evident by its numerous blossoms and delicate perfume. Fine clumps of the great foliage plant, Gunnera manicata, were growing on the bank, giving promise of enormous leaves. Its neighbour the Bog Myrtle was covered with catkins that when bruised gave a pleasant odour. At every step some fresh source of interest was aroused, and it was surprising to find so many plants thriving within the limits of the wild garden, the soil of which consists of light sandy loam and abundance of leaf-mould. The loam gives evidence of the presence of iron, and to this I attribute the unusual intensity of colour in Prunus Pissardi, Berberis stenophylla, Pyrus floribunda, and other flowering trees and shrubs. The double-blossomed Cherries and Plums were very beautiful and in great variety. Those sent from Japan some years ago were very similar to Cerasus Watereri, but not quite so double; Veitchii was undoubtedly the best. Other plants that caught my eye were Gaultheria procumbens, very pretty in glossy dark green foliage and ruddy berries; Andromeda floribunda in beautiful masses, Spiræa arguta, Cupressus Lawsoniana lutea, a nice specimen; red and white Camellias in partial shade, and Ilex Tarri (?), a fine specimen with broad, dark green leaves and large red berries. The correct name of this is wanted. The Amelanchiers were in beautiful condition, and if anything surpassed, them it was the fine specimen Cerasus sinensis pendula, which is the queen of the garden.

The varieties of Azalea mollis were full of bud, and will be a brilliant sight in the beginning of May; while Erica Veitchii × from Exeter was in bloom, and looking very pretty, and also a fine growth of Erica mediterranea.

A beautiful collection of single Camellias from Portugal has arrived, but without any clue to the name of the generous donor. Flowering trees and shrubs, fruit-trees, &c., have been presented by many of the principal nursery firms. *W. Rowsell, April 24, 1905.*

CHINA ASTERS.

THE illustration at fig. 115 has been reproduced from a photograph taken in the seed trial grounds of Messrs. Webb & Sons, at Kinver, Staffordshire. The bed in the foreground of the picture consists of varieties of the type known as Victoria, which has large, finely-formed flowers composed of imbricating segments. The type is obtainable in many shades and hues, or in distinct colours, and is among the most excellent Asters for use in flower-beds.

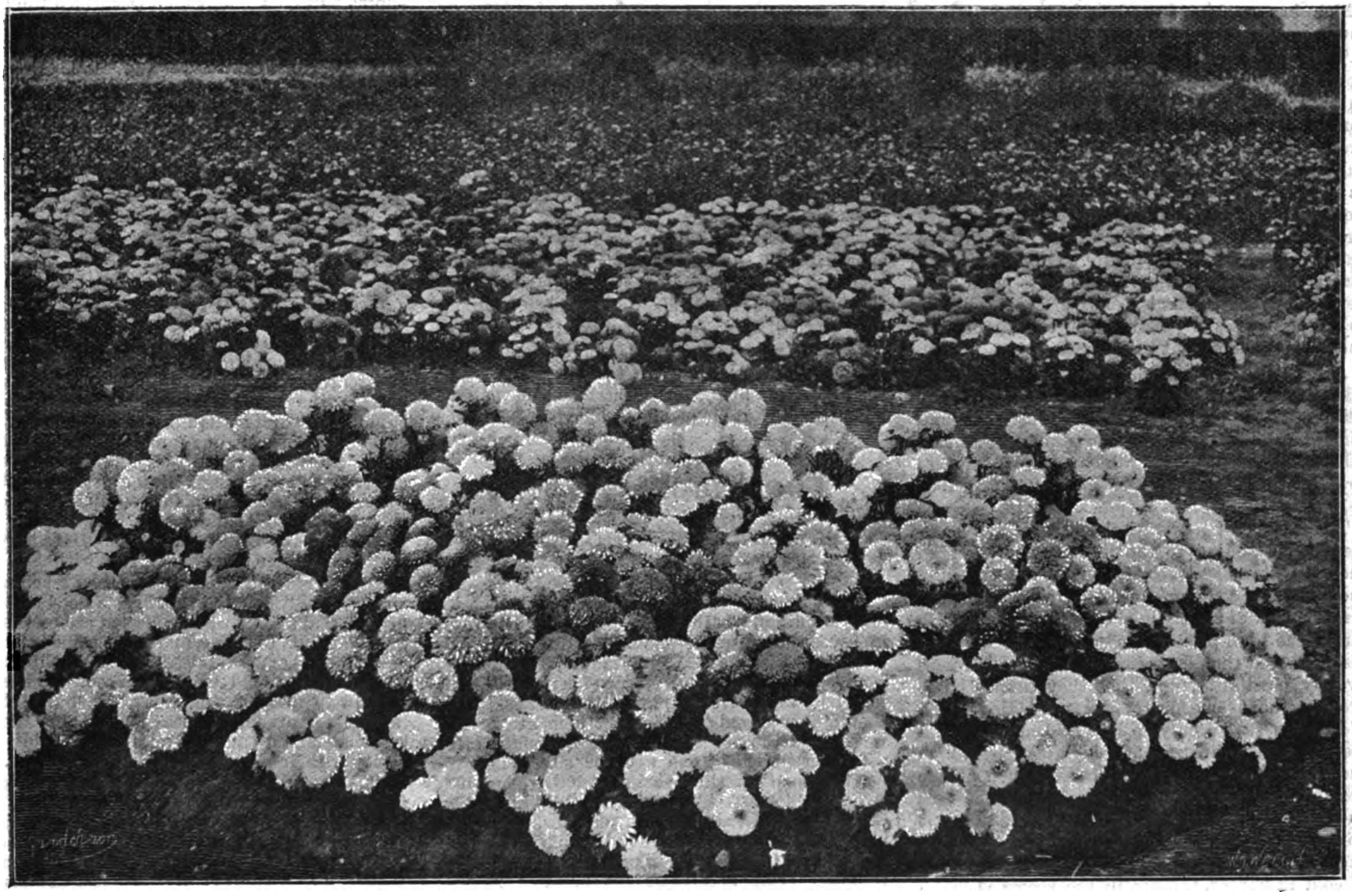


FIG. 115.—BED OF "VICTORIA" ASTER.

BOOK NOTICE.

ORCHIDS AND THEIR CULTIVATION IN APARTMENTS. With fifty Illustrations. Published by Trowitzsch & Son, Frankfort-on-the-Oder.*

IN this work of 100 pages quarto we have the opinions and experiences of an enthusiastic cultivator of these rare, extraordinary, and precious plants, Orchids. He has found that most of them are just as capable of cultivation in apartments as unprotected plants as many other species, and even more so; and he regrets that the general public has hitherto felt disinclined to take up their cultivation, seeing how easy it is with proper care and a correct knowledge of their requirements when in active growth and during the rest period.

The author has with commendable brevity endeavoured to enlighten his readers in every essential point of cultivation, and to clear away the prejudices that still find a place in the minds of many German amateurs and professional gardeners against Orchids in general; and in this matter he refers to the absence in many large towns of nurseries cultivating Orchids for sale, and of any publications dealing with the cultivation of the plants in the dwelling. Such a venture, as he remarks, is still in the cradle.

---

* *Die Orchideen und ihre Cultur im Zimmer, von A. Braecklein. Mit 50 Abbildungen.*

After a few short chapters on the habitats of Orchids from Siberia to the tropics, on the forms and build of the plants, the magnificence, the colouring and the never-ending variety of form and size of the blossoms, he remarks on their resemblance to insects, such as bees, butterflies, moths, spiders, birds of paradise, &c., instancing the scarlet flower of Ornithidium miniatum (Bird's-head Orchid) and Zygopetalum Mackayi, which has a close resemblance to the human countenance.

The freedom with which established Orchids flower every year once, and in some cases twice, as with Cypripedium Calypso, C. barbatum and some others, and the abundance of the blossoms produced are alluded to as good reasons for the cultivation of the plants in apartments, as well as their powers of resistance to untoward conditions in an equal degree with Dracænas, Palms, Bromeliads and Plectogynes, which belong to the hardiest classes of room plants. Orchids in such places suffer but little from plant pests, are never the prey of snails, earwigs or caterpillars, as in glasshouses is generally the case; moreover the plants take up but little space.

Among the first plants to be grown in rooms with success were Cypripedium insigne, Lycaste Skinneri, the valuable Cœlogyne cristata, and somewhat later Odontoglossum grande, and many others, the names of which were given in *Praktischen Ratgeber im Obst und Gartenbau*, 1901—1904.

The raising of new varieties is greatly recommended as adding to the interest and profit of the cultivator; and a chapter is given detailing the four most common objections to room culture, viz., the lack of beauty in the flowers according to some; the high prices asked by the dealers; the assertion that the plants cannot be grown in rooms by any possibility, and that they cannot be so grown without some form of glass protection. Each of these is set up only to be knocked down, and methods of cultivation are explained by which successful results may be obtained, such as the heating, ventilation, affording water at the root and to the pseudo-bulbs, leaves and incipient flower-buds. These are matters of great importance in Germany, where, from the greater degree of cold in winter, the air in the rooms is much dryer than in English houses, owing to the constant warmth emitted by the stoves. Great stress is laid on sufficient ventilation and light as a means of averting the decay of the leaves and the formation of fungus in the potting materials so common in Orchid-houses under ordinary conditions. This is the first essential of good cultivation.

For some species, such as Cœlogyne and Odontoglossum Rossi, shallow, unglazed saucers are recommended. These should not exceed 2½ inches in height and 8 inches in width, or the side of plant looking inwards will be too far from the light. Wooden baskets are advised for species of Stanhopea, and others like them, that push their flower-spikes through the bottom of the receptacle.

As potting materials, the author leans towards coarse leaf-mould and living sphagnum, intermingled with coarse quartz sand to assist the drainage of water away from the mass. He thinks that the use of charcoal will decline, because of the use of materials containing more nutriment than is found in sand, crocks, charcoal, and Polypodium roots. The coarser the mixture of sphagnum and leaf-mould the better, and the sand should be well washed of all earthy particles The application of water receives the attention it demands, and much good advice, evidently the result of years of close observation, is given, which should be of the greatest value to young and old practitioners alike.

The rejuvenation of Orchids has a chapter to itself, and it is made clear by an illustration. Insects and other enemies infesting Orchids fittingly round up the cultural part of the book. To this follows a list of those species of Orchids, with hints on cultivation, which up to the present have been found thoroughly amenable to room culture, among which we note Ada aurantiaca, Bifrenaria Harrisoniæ, Cattleya labiata Mossiæ, C. l. autumnalis, C. Schröderæ. C. Dowiana aurea, Cœlogyne (several), Cymbidium Lowianum; Cypripediums, many, including several crosses with C. insigne; C. Boxalli, C. Charlesworthi, C. Curtisi, C. hirsutissimum, C. Sedeni, C. Leeanum, &c.; Dendrobium Jamesianum, D. nobile, D. Ainsworthi, D. thyrsiflorum, and D. Wardianum, Lælia anceps and L. purpurata, Odontoglossum crispum, O. grande, O. luteo-purpureum, O. Pescatorei, &c.; Oncidium crispum, O. Forbesi, O. leuchochilum, O. Marshallianum, Stanhopea insignis and S. tigrinum, and Zygopetalum Mackayi.

To those of our readers who have an acquaintance with the German language, especially amateurs not in possession of a special glasshouse for the cultivation of Orchids, we would say, "Obtain this book, if only for the suggestive nature of its contents and the clear enunciation of the principles underlying these." The "why" and the "how" are abundantly described, and we have but little of the rule-of-thumb in evidence. *F. M.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen. S.W.

Cymbidiums.—Nearly all the valuable species of Cymbidium, whether old or new, may be grown in a cool-house under similar conditions of cultivation. Flowers of C. Lowianum, if permitted, would keep in good condition for months, but for the benefit of the plants the flower-spikes should be removed at the end of a month or five weeks, and the needs of the plant supplied after a further period of one week or so. When repotting plants of this species, also C. giganteum, C. grandiflorum, C. Tracyanum, C. Winnianum, C. eburneo-Lowianum, C. elegans, and the new C. Sanderi, they should be put into moderately large pots containing drainage material to more than half their depth. The rooting medium may consist of a mixture of one-half peat, and a fourth part each of fibrous loam and sphagnum-moss, with a good "dash" of sand and small crocks to secure porosity. The above species are all in a fit state for being repotted or surfaced at the present time, when new growths are coming away. Stage the plants in a house that has ample means of ventilation, where there will be a natural atmospheric temperature of about 60° to 70° during the daytime, remembering that fire-heat will only be needed to keep the temperature up to near 55°. For a considerable time after repotting, a very moderate supply of water should be afforded. Provide shade from bright sunshine, damp the surroundings and spray the plants overhead on bright mornings. Admit air first through the wall ventilators, and when the temperature approaches to 70° open the top ones a little. During the early summer months close the top ventilators early in the afternoon and syringe the plants overhead, but on the approach of autumn expose the plants to the cool dewy night air by leaving all ventilators open. Afford copious supplies of water when the plants are rooting freely, and to those that have not been repotted during the season a little weak liquid farmyard manure may be given.

Cymbidium eburneum, the gem of the genus, must be provided with more shade than is required for those species enumerated above, and may therefore be staged beneath some of the larger plants. So long as the drainage of these plants is in perfect order repotting is seldom necessary, as the old decayed materials may be picked out and be replaced with new. To the mixture recommended for the other species may be added some old lime mortar-rubble. Use smaller pots, in proportion to their size, but otherwise treat the plants similarly to other species. C. Mastersianum and the new C. Sanderæ require similar treatment; C. devonianum and C. tigrinum thrive in the Masdevallia-house, and unless the plants are of large size, they are best suspended. They may be planted in well-drained pans, in the compost recommended for C. Lowianum. It is only when growth is most vigorous that much water is needed, and even then the compost should be allowed to become almost dry before a fresh supply is given. Repot or re-surface the plants when new growths appear, which in their case will not be until the season is well advanced. Thrips being the only enemy of importance to Cymbidiums, these can be kept under with the usual vaporising compounds. The warm-growing species, such as C. aloifolium, C. Findlaysonianum, C. madidum, &c., need a very restricted supply of water, except when rooting freely and the weather is hot and dry. They are of little horticultural value.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Richardia (Calla) Elliottiana.—Plants that were started into growth early in February and have flowered, should be encouraged to make growth by allowing them to remain in a warm, moist atmosphere until they are fully matured, and in the meantime should receive copious supplies of diluted liquid manure, obtained from soaking sheep droppings, and an occasional sprinkling with Clay's Fertilizer. When the foliage shows signs of turning yellow gradually withhold water and harden the plants off, finally removing them to a cold frame where they will be fully exposed to the rays of the sun. Here they will ripen, and water must be entirely withheld.

Nerine Fothergillii.—Care must be taken not to ripen the bulbs off too quickly; a good season of growth and a long resting period are essential to get the plants to flower, and if the same treatment is afforded them as advised for Calla Elliottiana, no difficulty should be experienced. Unless it is desired to increase the stock, the bulbs should not be disturbed, an occasional application of artificial manure and liquid feeding being sufficient for their requirements for a long time.

Rhododendron (Azalea) indicum.—Remove the flower-stalks carefully from plants which have passed out of bloom, and examine the leaves for thrip. These insects should be removed by fumigating, or dipping the plants in "Quassia Extract" or a solution of "Gishurst Compound." Azaleas are most serviceable for furnishing a conservatory or corridor, and should be given the little attention they require. Encourage the plants to make satisfactory growths by placing them in a warm atmosphere for a time, and by shading them from the direct rays of the sun. Syringe them freely about, above, and beneath the foliage. If repotting is necessary the work may be done at once, but if the plants are required for "furnishing" purposes it is necessary to keep them in as small pots as possible, and in this case a top-dressing only should be given. Good fibrous loam, pulled to pieces by hand, with a little leaf-soil and silver sand added, will form a suitable compost. When growth is finished the plants may be gradually hardened and removed to a position out-of-doors, where they will have slight shade.

Boronias heterophylla, elatior, and megastigma,—The plants should be pruned somewhat severely. and treated in the first instance as advised for Azalea indica, but when they have completed their growth should thereafter be kept in a cool-house or frame.

Gardenias.—A batch of cuttings should be propagated each season, and the plants kept for two years only. Let cuttings be taken at the present time. Plants that are to be grown-on for another year should, after flowering, be cut back a little and top-dressed with fresh soil. A little bone-meal dusted round the roots before the new soil is added will benefit them. Shade the plants from the direct rays of the sun, and syringe them freely.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Disbudding.—The instructions on this subject given in last week's Calendar applied to Peach and Nectarine trees, but disbudding may be practised upon all kinds of fruit-trees, and if carried out skilfully the branches may be so arranged and controlled that the tree will be more fertile than if periodically pruned by means of a knife. The energies of the tree also will be directed to the formation of fruit buds. Examine horizontally-trained trees of Pears, Apples, and Plums, and in the first place give attention to those shoots which are to form the extension of the tree. Of the growths proceeding from the extremity of the leading branch, choose one on either side, to be tied or nailed-in horizontally as growth proceeds, and a leading shoot to be trained in an upright direction. Other growths proceeding from below the two shoots which are to be tied-in should be removed entirely or pinched so that the sap may be directed to the development of the others. If the trees are growing against walls young shoots growing towards the wall may be removed entirely, and a judicious thinning of the growths be made throughout the entire tree, so that each individual shoot may have free light and air circulating about it. If it is found that in some cases the terminal bud on growths required for extending the tree is a flower-bud, remove this, and select the next nearest growth to form the extension.

Fan-trained Trees.—Choose shoots in the best-placed positions throughout the tree for laying-in, and remove some entirely if they will not be required, the remainder should be subsequently pinched to about three leaves. Plum trees and dessert Cherries fruit very freely from spurs, therefore the formation of these should be encouraged. Old trees may have young shoots laid-in throughout the tree to fill the place of barren branches, which should be removed entirely in the autumn.

Strawberry Plants are now showing their flower-trusses, and the plantations should be afforded a mulching with some strawy litter to keep the fruits from coming into contact with the ground, or from being splashed with rain, which would make them gritty and unfit for use. If the litter be left in a somewhat uneven state and partially covering the plants, it will act as a protection to the blossom should frosts occur, for the Strawberry bloom is very tender, and the early flowers are often destroyed by 2° or 3° of frost.

The Loganberry, Blackberry, and Rubus of sorts are now throwing up suckers from their base; select only sufficient of the strongest for laying-in to fruit next season, and remove all others, continuing this operation from time to time during the season, as they make their appearance above ground.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Asparagus.—The cold winds and frosts (5°) experienced here recently have retarded vegetation, and few vegetables are more sensitive of change than is Asparagus. Examine the beds every morning, and make every effort to gather the shoots when they are 6 inches long, in order not to spoil the appearance of the "dish" by lack of uniformity. Asparagus plants are sometimes injured by being cut too severely. Where there is sufficient space there is something to be said for the practice of having a bed in reserve and cutting from the plants every other year only. In any case it is essential that a sufficient number of growths should be left to enable the plants to grow well and produce good "crowns" for the following season. Young plants should not be cut until the third year, and even then only a few of the strongest shoots should be cut from each stool. When gathering Asparagus we never use the knife here, but with a wooden peg in the shape of a label remove a little soil from around the shoot, gripping the shoot between finger and thumb, and then by a simple twist the work is done without the risk of causing damage. Asparagus should be eaten as soon after being cut as practicable, or the flavour will not be so good. Prevent weeds from growing by lightly disturbing the surface of the soil.

Brussels-Sprouts.—Plants that were pricked-off early we are now planting in the open ground in rows 3 feet apart, and allowing 2 feet between the plants in the rows. In order that the plants may become well studded with firm, compact sprouts they must have sufficient space to stand clear of each other when fully developed. The soil need not be very rich, but it should be made moderately firm. Sutton's Exhibition and Dwarf Gem are good varieties of this valuable vegetable.

Cabbage "Ellam's Early" and Cauliflower "Extra Early" sown at the same time are now being planted. The distance allowed between the lines is 18 inches, and the plants are put 12 inches apart from each other.

Broccoli.—The unbroken supply of this vegetable affords evidence of what the season has been like. Leamington having done good service, is followed by Model, the best of all late spring Broccolis.

Lettuce.—Tie up for blanching plants that were put out in the autumn. Bath or Brown Cos is the variety used here for planting at that season, and no Lettuce to my knowledge is more worthy of general cultivation, because of the agreeable nutty flavour it has. Fortnightly sowings will be necessary to maintain a supply, and if the seeds are sown thinly where they are to remain until matured they will not run to seed so soon. Superb White Cos and Perfect Gem are suitable varieties for sowing at this season.

Tomatos.—We are now putting into 6-inch pots plants that will be planted out in June. Tomatos will succeed in any ordinary soil, if a good sprinkling of wood-ashes be added and care be exercised in the matter of affording water to the plants. The single stem system of training is the best under glass or in the open. Keep the plants at present near to the glass, and afford ventilation freely.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Fruiting Pines.—The earliest Queens that were started at the beginning of January will now be swelling their fruits rapidly, and will require special care. Recent weather has included many sudden changes; the work of ventilating the structure has been one of much difficulty, it being essential to avoid having occasion to unduly heat the water-pipes. Close the house early, and allow the atmospheric temperature to rise to 95°, provided that there is plenty of atmospheric moisture. Spray the fruits and plants overhead lightly at closing time. Liquid manure and guano-water may be afforded the plants once or twice each week as required, and a handful of guano should be placed in the evaporating pans occasionally. Syringe the surface of the beds and the base of the plants with guano-water, and damp the paths with liquid manure. Afford slight shade to the plants during the very brightest part of the day, and let the amount of ventilation be determined by the power of the sun's rays at the time. Keep the atmosphere of the house slightly drier when the fruits change colour, and discontinue the root-waterings, or the plants may be removed to a vinery where the Grapes are colouring or other suitable place where the atmosphere is cooler and drier than that of the Pine-stove.

Plants in Flower.—Keep these in slightly drier conditions until the flowers are fertilised, and afterwards give them similar treatment to that advised for the earliest plants.

Successions.—Admit air freely on favourable occasions to the compartment containing plants that have become established, and maintain the bottom-heat steady. Take advantage of bright days to close the house early. Syringe the beds and all available spaces, and lightly spray the plants overhead at closing time. As the plants increase in growth give them occasional waterings with liquid-manure and soot-water, applying the liquid at the same temperature as that of the bed. Provide slight shade from bright sunshine. Pot-up fresh suckers according to the requirements of the establishment.

Strawberries.—Where sufficient plants are grown to provide a continuous supply of ripe fruits until Strawberries ripen out-of-doors, it is necessary to remember that the plants will now require more plentiful supplies of water, and they should be syringed freely to keep them in a clean and healthy condition. All plants should now be removed from vineries and Peach-houses, and be ripened in a cooler house or Peach-case, where the water from the syringe can be applied more effectively. Thoroughly wash and cleanse the shelves that have been used for Strawberry-plants, with some insecticide to clear them of red-spider. Later plants in cold pits or frames may be retarded by admitting abundance of air, or even by removing the lights on bright days. If it is necessary that they be pushed forward, syringe the plants lightly, and close the structure early in the afternoon.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Roses.—Tea Roses in pots and intended for planting-out may be planted during the present month, either for the furnishing of new beds or to fill up blanks in others. Free-growing varieties, such as Madame Lambard and Marie van Houtte, are most reliable. Look out for caterpillars, and crush them between the finger and thumb. Have some Compound Liquid Quassia Extract, or a preparation of nicotine and soft-soap, in readiness to use against green-fly. Sulphur specifics may be necessary to destroy mildew. Let the surface of the beds be hoed and raked on favourable occasions.

East Lothian Stocks.—Plants that have been raised from seeds sown in February will now be ready for planting into the beds or borders. Let the soil be well worked, and incorporate with it a plentiful supply of rich manure.

Antirrhinums are admirably adapted for cultivation in dry and sunny positions. Plants that were rooted last autumn may now be put out. Antirrhinums raised early this year may be planted out in the middle of the month.

Alpine Plants.—The present is a suitable time for planting these. Bear in mind that though the plants are of small size, they nevertheless require a depth of soil of at the least 18 inches. Be careful to plant firmly, and see that there are no unfilled spaces amongst the fissures. Morisia hypogæa (yellow) is almost a perpetual flowerer, and is of very easy culture. It lies close to the ground. Aubrietia "Craven Gem" is a superb purple-flowering variety, and A. "Dr. Mules" is of good merit. Saxifraga "Guildford Seedling" is rich and deep in colour.

Cannas.—Roots that have been stored all winter in a frost-proof shed should now be put into boxes in any light soil, and placed in moderate warmth, in order to induce them to start into growth. The plants require a warm and sheltered position, also a rich, deep soil. They are effective in beds, and are useful for filling up blanks in borders of mixed plants.

Early-flowering Chrysanthemums.—Suckers that were put into boxes last autumn, and that were wintered in a cool-house, are now hardened off. They are sturdy plants, and will soon be fit for planting into the borders. The various forms of C. maximum (Shasta Daisy) are invaluable. Use autumn-struck plants or divisions obtained from old plants.

Violets.—New plantations may now be made. Pull the old stools to pieces, and select the strongest offshoots. Plant them in a border that is very slightly shaded, and one on which a good dressing of well-rotted hotbed-manure has been incorporated.

"INSECT LIFE."—We have received a book entitled *Insect Life*, a short account of the classification and habits of insects, by Fred. V. Theobald. The volume is already in its second edition, and letterpress and illustrations alike seem to promise further success for it. We hope to refer to it at greater length as soon as space permits. The publishers are Messrs. Methuen & Co., 36, Essex Street, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, MAY 9 — Royal Horticultural Society's Committees meet. National Rose Society's Committee meets.
THURSDAY, MAY 11 — Royal Gardeners' Orphan Fund. Annual Dinner at Hotel Cecil at 6 30 for 7 P.M.
FRIDAY, MAY 12—Royal Botanic Society's Lecture.

SALES FOR THE WEEK.

WEDNESDAY NEXT—
Palms, Plants, Liliums, Herbaceous and Border Plants, Ferns, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.
FRIDAY NEXT—
Imported Orchids, by order of Messrs. Sander & Sons, Renanthera Imschootiana, Established Orchids, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —52·2°.
ACTUAL TEMPERATURES :—
LONDON. — *Wednesday, May* 3 (6 P.M.): Max. 60°; Min. 35°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London. — *Thursday, May* 4 (10 A.M.): Bar., 30·2; Temp., 55°. Weather dull with occasional sunshine.
PROVINCES. — *Wednesday, May* 3 (6 P.M.): Max. 54°, Bournemouth; Min. 45°, N. coast of Ireland.

Hereditary Transmission of Anomalies caused by Wounds.

A paper is published under the above heading by M. BLARINGHEM in the *Comptes Rendus* for February 6, in which the author says that trials commenced in 1902 and successfully carried on since appear to justify the following hypothesis :—When the aërial shoots of certain herbaceous plants are cut during a period of rapid development the development of numerous shoots is encouraged, and these for the most part present anomalies of the vegetative apparatus and of the inflorescence.

Cutting of the principal stems produced the following anomalies :—

1. Fasciation in the panicles of Maize, of the branches of Mercurialis, fusion of the branches of the panicle in Sorghum.

2. Torsion of the stems of Maize, Barley, Oats, and the branches of Mercurialis, displacement of the leaves of Maize which are grouped in whorls, alternate arrangement of the leaves of Mercurialis.

3. Metamorphosis of the male flowers or sterility in the female or the production of hermaphrodite flowers in Maize, Barley, Hemp, and Coix lacryma.

4. Increased number of stamens in the male flowers of Maize, the spikelets of Barley, of the spikelets on the lateral axis of Maize, on an ear of Barley, and of the panicle of the Oats. In the same plant a a co-relation is shown between its several anomalies. Thus fasciation of the branches of the terminal inflorescence of Maize involves the metamorphosis of the male flowers into fertile female flowers. On many varieties of Maize the inverse anomaly was produced, the torsion of the ears during the progress of growth provoking a thinning of the axis and the metamorphosis of female into male flowers.

Actuated by these experimental results, M. BLARINGHEM sought and found, in artificial meadows that were cut several times before maturity, anomalies which he believes were due to a similar cause. At the beginning of September, 1904, and in the same locality, where the soil is very fertile, he found in the fields of Trifolium pratense sown that year a proportion of from five to eight per thousand plants bearing leaves with four or five segments, and in the fields where the same variety, sown the previous year, had been twice mown a proportion of from twelve to thirty-seven per hundred of abnormal plants. The anomalies in the latter instance were present in many cases on the same plants; the leaves had from four to eleven petioles, and showed pitcher-like growths. Further, the shoots of Onobrychis sativa (Sainfoin), after cutting, showed in the pinnate composite leaf, leaflets grouped in threes and fours. Lolium perenne under the same conditions had branched spikes or multiple spikelets given off from the same point. The most curious anomaly was furnished by Leucanthemum vulgare, which showed plain traces of the stems having been cut; in one case the ligulate flowerets of the ray were partly transformed into tubular florets; in another case the bracts of the flower-head bore in the axil supernumerary ligulate florets doubling, as it were, the crown formed by the strap-shaped florets of the normal flower-head. Some of these variations were particularly interesting, as they showed a hereditary transmission clearly traceable to an artificially induced anomaly.

The metamorphosis of male flowers of the terminal inflorescence of Maize into female flowers yields seeds that, in spite of the absence of self-fecundation, furnish a large proportion of distorted plants.

The degree of heredity attained by a plant mutilated in 1902, and seeds of which planted in 1903, was seventy-five per cent., and in 1904, in spite of the drought (which seems to be unfavourable to variation), about fifty per cent.

Further, for a variety of Vilmorin's Maize, which in consequence of cutting of the principal stem had put forth leaves and female ears in the twisted panicle, the torsion of the panicles was markedly inherited (sixty per cent.) in cultural experiments carried out in the Pas-de-Calais, as well as in the environs of Paris. This fact led the observer to seek a possible explanation of the cause of the hereditary variation of Dipsacus silvestris var. torsus, studied by DE VRIES. The learned Amsterdam professor announced that after having cut the principal stems of plants which had not inherited the anatomical peculiarity of the mother plants, he observed a very remarkable tendency to torsion in the shoots developed after the mutilation. He repeated the experiment for two successive years with the same result.

It would seem, then, that cutting the main stems of herbaceous plants in full growth induces exceedingly rapid development of adventitious buds, which receive perforce an excess of nutrition. In rich soil even the abnormal buds yield fertile seed, which reproduce the anomaly markedly. These injuries seem then as if they might be utilised in securing the appearance of characteristics latent in the plants that are in a state of "mutation," if they are not themselves one of the causes of these spontaneous and hereditary variations.

We may here add that we received from Professor DE VRIES, several years ago, seeds of the twisted Teazle which did not reproduce the twisted condition, nor have their descendants, which come up freely in the garden every year, shown any tendency to twist. Last year we endeavoured to induce torsion by pinching out the terminal bud and by other mutilations, but although adventitious buds are produced in abundance, the shoots preserve their normal appearance.

ROYAL HORTICULTURAL SOCIETY. — The next meeting of the Committees will be held at Vincent Square on Tuesday, May 9, when lectures will be given by Mr. N. HAYASHI on "Japanese Horticulture," and by Mr. R. E. FARRER on "Japanese Plants and Gardens," which he will illustrate by lantern-slides. It is hoped that on that occasion there will be a good exhibition of Japanese trees and plants.

THE SURVEYORS' INSTITUTION.—The next ordinary general meeting will be held in the lecture hall on Monday, May 15, 1905, when a paper will be read by Mr. J. D. WALLIS (Fellow), entitled "The Licensing Act, 1904, with special reference to the question of Compensation and Monopoly Value." The chair will be taken at 8 P.M. The Council has accepted an invitation from the Devon and Cornwall Provincial Committee of the Institution to hold the next country meeting at Exeter, on May 25 and 26. Visits have been organised to the principal places of local interest in Exeter, and excursions, as follows: (1) To Torquay and Totnes, and by steamer down the river Dart to Dartmouth. (2) To Plymouth, and by steamer to the Devonport dockyard extension works, the Devonport and Keyham dockyards, and other places.

SALE OF ORCHIDS AT BANK HOUSE, ACCRINGTON.—The first day's sale of duplicates on Tuesday last in the collection of R. BRIGGS-BURY, Esq., successfully presided over by Mr. HAROLD MORRIS, of the firm of Messrs. PROTHEROE & MORRIS, 67 and 68, Cheapside, brought a total of just over £3,330. The three-hundred-and-fifty lots sold contained fair examples of many noted Orchids, but the highest prices were obtained for albino Cattleyas and Odontoglossums. Of white Cattleyas, C. Mendeli Quorn House variety realised 75 gs. and 90 gs. respectively; C. M. "The Queen," 26 gs.; C. M. Duchess of York, 24 and 23 gs.; C. Countess of Derby, a white Hardyana, 150 gs.; C. Schröderæ alba Bank House variety, 60 gs.; C. labiata alba Bank House variety, 75, 50, and 35 gs. each for the three plants sold. Many fine varieties of C. Mossiæ Reineckiana realised from 20 to 40 gs. each, and all fully sustained their values. Odontoglossum crispum Georgiana went for 40 gs.; O. crispum Petersii, 160 gs.; O. crispum Queen Victoria, 190 gs.; O. c. Mariæ, 85 gs.; O. c. Madame F. Peeters, 200 gs.; O. c. Queen Margherita, 120 gs.; and O. c. Mrs. F. Sander, 55 gs. Other good prices were obtained for Lælia tenebrosa Walton Grange variety, 70 gs.; Cypripedium × Mandiæ, 30 gs.; C. × Milo Westonbirt variety, 20 gs.; C. × aureum Surprise, 18 gs.; C. insigne aureum accringtonensis, 22 gs.; C. insigne Berryanum, 28 gs. C. insigne Harefield Hall variety and other rare Cypripediums sold well. The amount realised from the sale on the first day was £3,330, and on the second day £2,763, making together a total of £6,093. The interest in the sale continued to the last lot, and all the good things rather rose than declined in value. On the second day the best prices were Odontoglossum crispum Madame Valcke, 140 gs.; O. c. Duchess of Connaught, 150 gs.; O. c. Petersii, 150 gs.; O. c. Charlesworthii, 50 gs.; Cattleya labiata alba Bank House variety, 60 gs.; C. × Hardyana alba, 50 gs.; C. Countess of Derby, 140 gs.; C. labiata alba, 36 gs.; and others at equally good prices.

THE "ECKFORD" MEMORIAL.—The secretary, Mr. HORACE J. WRIGHT, reports that up to the present time 440 shillings have been contributed to this fund.

SEEDLESS APPLES.—As we have already intimated these are no novelties, nor are they of such quality as to render them desirable for commercial purposes at present, although as botanical curiosities they will always be interesting. Mr. W. T. MACOUN, the Government horticulturist at Ottawa, has an article in the *Canadian Horticulturist* for April, in which the conclusions we have above mentioned are elaborated in detail. A still more vigorous statement is made by Professor CRAIG, of Cornell University, in the same number. The whole story, says he, "of this wonderful creation savours of quackery, and I am inclined to lose patience with horticultural journals which offer their columns to the exploiting of an absolutely unknown plant-production in this generous, free, and decidedly unsophisticated manner. Can it be that horticultural journals are becoming inoculated with the germ which develops a craving for sensationalism? Are they imitating the yellow hue of some of their strictly news-dealing contemporaries?" We do not think the English horticultural Press in general can fairly be accused of proving false to their trust in this matter. It stands aside in wonderment at the random statements in the lay Press, but it does not endorse them, nor adopt the sensational methods which are creeping into journals even of the highest standing. The expression "absolutely unknown" above cited must be taken in a limited sense, as is obvious from the context.

—— The two specimens of this Apple which were purchased by Messrs. SHEARN & SONS, of Tottenham Court Road, some weeks ago, and about which so much has been written, were, as we are informed, cut open, in the presence of several representatives of the Press, on Tuesday the 2nd, when it was found that the Apples had well-matured seeds and quite a hard woody core. In cutting a Tasmanian Apple it was found to have much less core. The above result will not surprise those who understand the subject, but there are doubtless many who have believed in the phenomenon, and we know there have been a good many anxious to procure trees, therefore they should be undeceived.

THE INTERNATIONAL BUILDING TRADES' EXHIBITION, held during the past week at the Royal Agricultural Hall, Islington, London, N., was of interest to those concerned in the management of estates, and contained some exhibits more or less instructive to those having gardens under their charge. There were to be seen the latest devices for cheap and expeditious erection of buildings, outhouses, and the like; the best preservatives for coating perishable woodwork, &c.; the thousand-and-one uses to which iron, wood, and stone are applied; garden furniture and ornaments, rustic buildings, improved methods of heating greenhouses and other buildings, economical fuel-consuming boilers, improved methods of ventilation, glazing, paving, and preserving glass and other structures, &c. The EXPANDED METAL Co., Ltd., York Mansions, York Street, Westminster, had many useful things, such as tree-guards, fencing, gates, arches, tennis-guards, &c., all constructed from their speciality, which is stamped out of solid sheet-iron. Messrs. HARTLEY & SUGDEN, Halifax, displayed on their stand the latest designs among boilers, radiators, hot-water piping, valves, and other engineering appliances. Messrs. T. W. PALMER & Co., Westminster, showed examples of cheap fencing, also tree-guards, buildings, &c. Preservatives for wood and iron-work were largely shown. Messrs. WALTER CARSON & SONS, Lombard Road, Battersea, showed their non-corrosive paint on woodwork treated with the same; also examples coated with "Vitrolite," a paint specially manufactured for the protection of conservatories and other horticultural buildings. The sanitary washable distemper known as Hall's Sanitary Water Paint, made by Messrs. SISSONS BROS. & Co., Ltd., is another inexpensive paint, and is recommended for almost any kind of building. Quite the latest styles in garden-gates were to be seen on the stand of Messrs. G. F. BRAGGINS & Co., Oxford. Messrs. FULCOX & Co., Tudor Street, E.C., exhibited portable greenhouse heating systems, radiators, boilers, &c.

FORESTRY.—The Forestry Exhibition at the Royal Agricultural Show at Park Royal last summer was so interesting that we are glad to see that it is proposed to renew it this season, from June 27 to June 30. Offers of exhibits should be addressed to the Secretary, Royal Agricultural Society, 13, Hanover Square, London, W.

HORTICULTURE AT LYONS.—A horticultural exhibition will be held at Lyons from June 8 to June 18 in connection with the National Agricultural competitions. The jury will be chosen among those who are not resident in the city or its environs. All branches of horticulture will be represented.

THE ABUSE OF FLOWERS.—A correspondent sends us the following extract from the *Morning Post* of April 29:—

> "The Easter decorations of Brixham Parish Church consisted of 27,336 bunches of Primroses, each bunch containing two dozen flowers. All the Primroses were picked by Sunday-school children, to whom book prizes were offered. A girl who picked 4,000 bunches won the first prize, and a boy who picked 2,940 bunches the second prize."

Our correspondent justly remarks, "Do you not think it would be well if real flower-lovers protested against this barbarous slaughter of lovely spring flowers? These thousands of bunches were presumably strung up without any water, and could therefore only last for a few hours or a couple of days at the most. How about the despoiling of the copses and lanes where people walk to enjoy the sight of these flowers, which would have gone on blossoming for perhaps a fortnight, and then produced seed? If this is 'Sunday-school' education, we shall have a much spoiled England in the future, because this paragraph is, I suppose, *pour encourager les autres*, and other gatherers will compete for prizes. Most of my life I have been planting Primroses, Cowslips, Narcissus, Anemones, Squills, Ornithogalum, and plants too numerous to add here in wild places, but never contemplated their being ruthlessly gathered in this way, to fade almost before they are blown. I thought of their cheering the eyes of the wayfarer who has no garden of his own. Every year I am obliged either to strip the berries of many of my large Holly trees, or throw lime on them shortly before Christmas, or they might chance to be cut down for decoration (in places where they are specially needed as screen or shelter). It has so happened a few yards from my place. Why cannot the church decorators be content with moderation in their decorations? A clergyman's wife told me some years ago that there was such keen competition now between parishes as to the extent and intricacy of the ornamentation of their churches that it was getting to be an overpowering burden; and this lady was really fond of her decorations, and a good gardener, and did not grudge time and trouble. But the growing tendency to extravagant and absurd redundance is serious, and I cannot help hoping that some commonsense comments may be coming forth from the public." We are in entire sympathy with the views thus expressed. If such vast quantities of flowers are required for this and similar purposes, let them be obtained from commercial establishments, where they are cultivated expressly for distribution. It should be everybody's business to help to maintain our lanes and woodlands as attractive and interesting as possible.

THE NATIONAL FRUIT GROWERS' FEDERATION AND THE ROYAL HORTICULTURAL SOCIETY.—A Conference has been arranged under the united auspices of these two societies for October 10, 11, and 12 next, when it is understood the following will be amongst the subjects of discussion: "Foreign Competition and how to meet it; Grading and Packing; Land Tenure and and Rating Difficulties; Railway Grievances; Proposed Establishment of an Experimental Fruit Farm by the Board of Agriculture; and Insect Pests." The chairmen for the different discussions will probably be Sir TREVOR LAWRENCE, Bart., Mr. A. S. T. GRIFFITH BOSCAWEN, M.P., Sir ALBERT ROLLIT, M.P., Col. C. W. LONG, M.P., and Mr. F. S. W. CORNWALLIS. As the great Autumn Fruit Show of the Royal Horticultural Society will be held in the new Hall, Vincent Square, at the same time as the Conference, the combined attractions should secure a large attendance and a very successful gathering. Arrangements for this event will form part of the business at the Council and Annual General Meeting of the National Fruit Growers' Federation on May 8.

THE ANNUAL FESTIVAL OF THE ROYAL GARDENERS' ORPHAN FUND.—In connection with this event, which will take place at the Hotel Cecil, Strand, on Thursday next, we have once again to remind our readers that a larger annual income is needed if the Fund is to be enabled to help all gardeners' orphans who are in necessitous circumstances. As was shown in the report published on February 18 last, the amount received from annual subscriptions falls very far short of the sum required, and were it not for the money raised each year by means of the Festival Dinner the committee would only be able to afford assistance in a few instances, leaving the greater number of candidates totally unprovided for. The objects of the Fund are so good that it should not be necessary for us to plead them, and the expenses of management are low, and moreover they are covered by the interest obtained from investments. At the forthcoming Festival the President will be the Earl of MANSFIELD, and it is hoped that he will be accorded a very large measure of support. The Secretary, Mr. BRIAN WYNNE, whose address is 30, Wellington Street, Strand, will be glad to hear from anyone who will afford help, or can be present at dinner. Donations may be forwarded to any of the following Stewards:—W. R. Alderson, Bell Farm, Hersham, Walton-on-Thames; John Assbee, Market Office, Covent Garden, W.C.; W. Y. Baker, Thames Bank Iron Co., Upper Ground Street, S.E.; George H. Barr, 11, 12, 13, King Street, London, W.C.; W. Bates, Cross Deep, Twickenham, S.W.; Wm. Bull, 536, King's Road, Chelsea, S.W.; G. Caselton, Garden Superintendent, Crystal Palace, S.E.; George Cuthbert, The Nurseries, Southgate, N.; Herbert J. Cutbush, The Nurseries, Highgate, N.; W. H. Cutbush, The Nurseries, Barnet, Herts; James Douglas, V.M.H., Edenside, Great Bookham, Surrey; W. Howe, Park Hill Gardens, Streatham Common, S.W.; David P. Laird, Pinkhill Nursery, Murrayfield, N.B.; J. Lyne, Foxbury Gardens, Chislehurst; J. F. McLeod, Dover House Gardens, Roehampton, S.W.; J. McKerchar, 85, Giesbach Road, Upper Holloway, N.; H. B. May, Dyson's Lane Nursery, Upper Edmonton; George Monro, V.M.H., Covent Garden Market, W.C.; J. W. Moorman, The Lodge, Victoria Park, E.; T. A. Morris, 67, 68, Cheapside, E.C.; Whitpaine Nutting, 106, Southwark Street, S.E.; R. Hooper Pearson, 40, Brocklebank Road, Wandsworth, S.W.; W. Poupart, Marsh Farm, Twickenham; G. Reynolds, Gunnersbury Park Gardens, Acton, W.; E. Rochford, Mill Lane Nurseries, Cheshunt; W. Roupell, Harvey Lodge, Roupell Park, S.W.; T. W. Sanders, 124, Embleton Road, Lewisham, S.E.; R. Saxby, Westbury Terrace, Westerham, Kent Edward Sherwood, 152, Houndsditch, E.;

William Sherwood, Dunedin, Streatham Hill, S.W.; P. Murray Thompson, S.S.C., Secretary, Royal Caledonian Horticultural Society, 5, York Place, Edinburgh; W. P. Thomson, 25, Bollo Lane, Chiswick, W.; H. J. Veitch, F.L.S., 34, Redcliffe Gardens, S.W.; and J. H. Witty, St. James' Villa, Swain's Lane, Highgate, N.

Transformation of Prince's Restaurant.—Not only has the Salle de Restaurant itself been redecorated and refurnished, but, most important of all, a fine winter garden has been added on the site formerly occupied by the shops on the Piccadilly front. These important works have been entrusted to the Société d'Entreprise et de Fournitures, of Paris, and have been executed according to the plans and designs of their architect, our friend and colleague Monsieur Martinet, the editor of *Le Jardin*. To give a detailed description of the task that has been so successfully accomplished by the architect would be wellnigh impossible at this stage. From the Piccadilly entrance we enter into a handsome vestibule, from which we pass direct into the winter garden. The Louis XVI. style has been adopted throughout, giving to the interior an impression of beauty and delicacy. The lines of the vaults of the ceiling supported by ten pilasters of rose-coloured marble, the jardinières of living flowers, the tropical plants, the furniture and upholstery, give to this apartment the appearance of an imposing "orangerie," the parallel of which could only be found in the historical Trianon. At the end of this abode of flowers a statue of Flora will, a little later, complete this production of an artist's genius. Flowers in fact supply the general idea of the whole, for from the garden it is carried with great skill and with most striking and pleasing effects into the *salle* of the restaurant itself. Here flowers climb along the pilasters to the vaults above, intermingle with the consoles, entwine the panels, gently encircle the ceiling, to descend in a most natural manner down the electroliers. The idea is quite modern in its conception and execution, and yet the Louis XVI. style is strictly maintained. Beautiful paintings embellish the various divisions of the ceiling, the central one being worthy of special notice. It represents Apollo staying his chariot to dwell yet longer amongst the flowers before the temple of the Sun. Lower down and towards the centre flowers are arranged in bouquets which seem as if they were showered on to the assembled guests by groups of Cupids. This masterpiece of the painter's art is signed by Maitre Lequesne, one of the most prominent French painters of the day. Four beautiful statues, the work of the young but already renowned sculptor Ducuing, and a pupil of Falquière, representing Spring, Summer Autumn, and Winter, complete the decorating of this apartment. Apart from the electroliers of unique design and works of art in themselves, a very clever effect has been obtained by hiding electric lamps inside the cornices framing the various paintings of the ceiling, so that they will appear as if bathed in perpetual daylight. The appearance of the room will be extremely light, for white is the predominant colour, tempered by imperceptible shades of rose and ivory. The carpets display branches laden with delicate flowers, and even the table-lamps represent graceful stems ending in soft blooms within which electrical lights will be hidden. We may add that the Galleries of the Institute of Painters in Water Colours have also been entirely re-arranged and decorated.

Monstera deliciosa.—I received several requests for plants of this species, but two or three of them have got misplaced or thrown away. Will those who wish for plants apply again for them, and they will get them in due time? At present the weather here is rather cold for moving them. The plant is a large one, and will make eight or ten large, well-rooted pieces. *C. W. Strickland, Hildenley, Malton.*

Proposed Rose Show at Southampton.—The Southampton Royal Horticultural Society is endeavouring to make its coming summer exhibition the principal Rose show for the Southern Counties. With that end in view the Council have instituted a special subscription list, the proceeds of which are to be devoted to improving the classes in the schedule that are exclusively for Roses. The Council of the Society have themselves voted £20 to this fund.

Princess Christian at Cardiff.—On the arrival of H R H. Princess Christian at Cardiff, on April 28, the Mayoress presented a bouquet made by Mr. Baggesen, Florist, Albany Road, Cardiff, and composed of Orchids and other choice flowers. Her Royal Highness stayed at St. Fagan's Castle for several days, where Lord Windsor has a very interesting and well-maintained garden.

Flowers in Season.—We have received a box containing a number of choice varieties of Daffodils from Messrs. Dicksons, Chester. The varieties, although not all of them new, embraced some of the best kinds in the various types, and exemplified the great divergences of forms to be found among Narcissus. Thus the giant white trumpet of Madame de Graaff differs widely from the corona of Elaine, while the form of flower of Queen of Spain is quite unique in itself. Lulworth and Albatross both possess an orange-scarlet chalice, but are otherwise quite distinct. The modest manner in which the variety Mrs. Camm hangs its head has the effect of keeping its pollen dry.

—— Mr. G. Reuthe, Keston, Kent, sends us a few "heads" of species of Himalayan Rhododendrons, which he declares to be quite hardy at Keston, provided the flowers are protected during severe frosts, and that the plants are moved during spring only. The varieties and species included R. Maddeni (white), R. Aucklandi (white), and a gigantic pink form of the latter species, R. Thomsoni (a very fine species, having large crimson flowers of a campanulate form), and R. arboreum album.

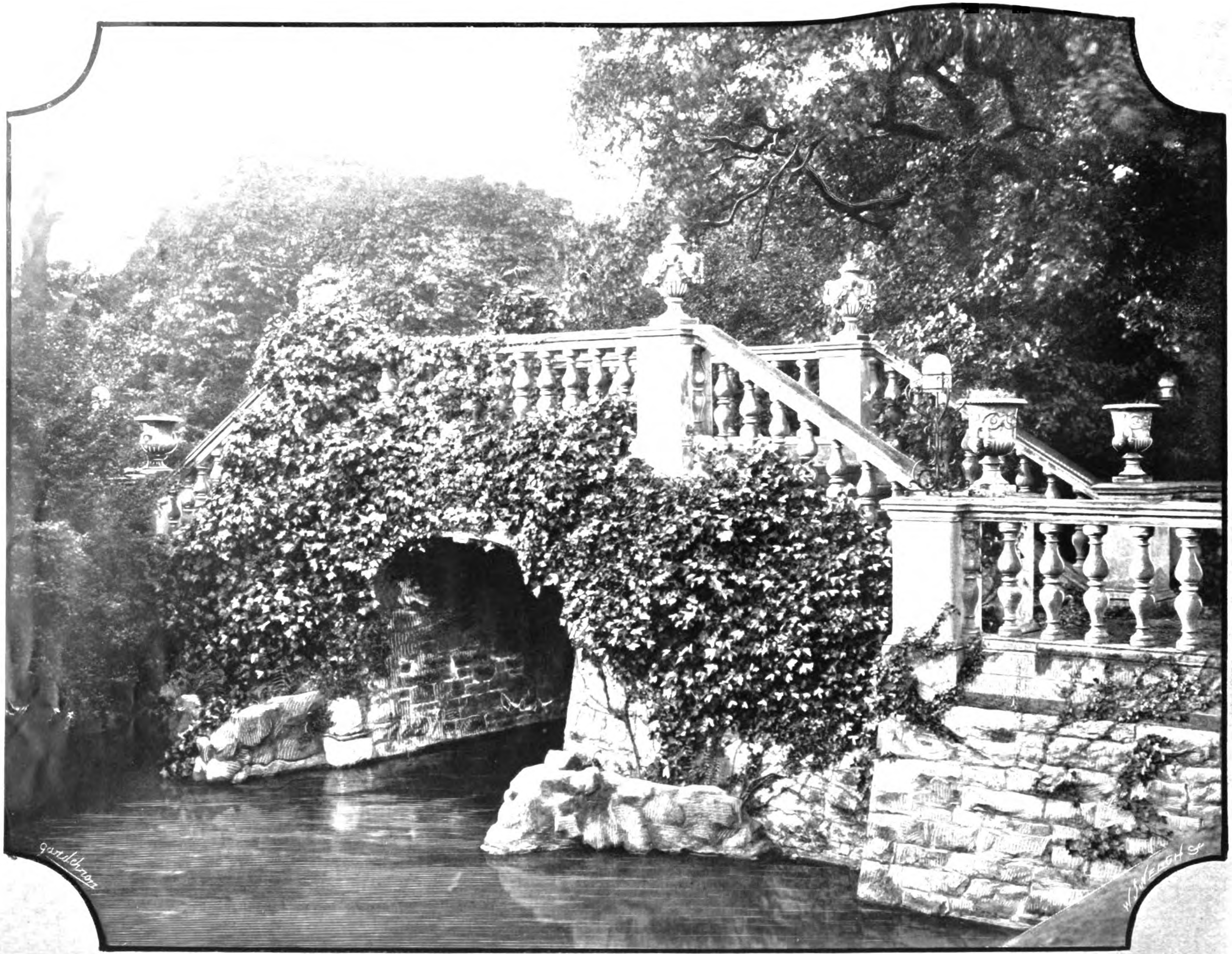
The Hampton Court Vine.—The old Vine at Hampton Court can now be seen in full growth, and revelling in its old age in an entirely new habitation. Could the Vine speak, it would doubtless tell a thrilling story of its emotions when last autumn its giant branches were detached from their old positions, hard pruned, swathed in coverings to give the eyes protection, then secured to some improvised supports whilst the old vinery was removed and an entirely new light one, more lofty, of three-quarter span-roof, and fitted with all the best appliances, was erected in its place. Still farther, all the old floor of stone slabs, the ancient brick flues, and much of the former soil and useless base were cleared out, the large floor practically converted into a modern Vine-border, on which is now laid some movable wood trellises as footpaths for the use of the veteran cultivator, Mr. Jacks, who still has charge of the old Vine under Mr. Mackellar, of Frogmore. The public no longer has admission into the vinery proper, as before. Then the passage of several thousands of persons on particular days through the house not only created an undesirable atmosphere, but raised clouds of dust, coating foliage and fruit very harmfully. By cutting out a side room from Mr. Jack's residence a semicircular lobby has been formed, divided from the vinery by a large glass partition. This lobby has both entrance and exit, and visitors can see the old Vine admirably without doing it any harm. Many loads of good turfy loam have been utilised to form a new border, and literally floor the house, and also to form a moderately-wide border outside. A broad gravel-path that formerly ran along close in front of the vinery has been removed, and a footway on an iron grating has replaced it. Already many of the previous years' rods are throwing capital breaks, and there is generally an excellent show. In a few years the Vine will be, no doubt, wonderfully improved.

Gardeners' Royal Benevolent Institution.—By the kind permission of Earl Beauchamp, K.C.M.G., President of the Worcester Auxiliary, the beautiful gardens at Madresfield Court were thrown open to the public on Easter Monday. A small charge was made, and upwards of 800 people paid for admission, the sum of £32 being taken at the gates. The event was advertised as a "quiet day for quiet people." Some 500 picture postcards (the Rocks, Madresfield Court) were sent out, also 1,000 small circulars and 500 large posters; in addition there were advertisements in the local Press. Tea and other refreshments were provided in a tent erected near to the maze. The modern system of grouping and massing naturalised hardy bulbs and other spring flowers in the grass was to be seen at its best, giving great pleasure to many, whilst others admired and took notes of the up-to date collection of hardy flowering shrubs; others, again, devoted considerable time to an examination of the kitchen gardens, hothouses, the home nursery, or the complete collection of hardy fruit trees, now wreathed in all their glory of blossom.

Blairgowrie Horticultural Society.—The Society has published in pamphlet form a summary of the horticultural lectures delivered before the Society in 1904. The subjects treated of were:—Roses, by Mr. J. Simpson; Tomato-growing, by Mr. G. B. Beale; Fruit-culture, by Mr. Storrie; and Vegetables, by Mr. John Laing. The lectures were evidently of a thoroughly practical character, and as such likely to be appreciated by working gardeners. The annual exhibition will be held on August 25, 26, in the Public School, Blairgowrie; and the second Chrysanthemum show in the Public Hall at the same place on November 9.

A Reputed Mosquito-Plant.—We have received the Annual Report for 1903—4 on the Gardens of His Highness the Maharana Fateh Singhji, Bahadur, of Udaipur, Mewar, and note that the Superintendent, Mr. Thos. H. Storey, has been making experiments with a view of abating the mosquito nuisance. He says that he received seeds of Ocymum viride, the so-called mosquito-plant, from Sierra Leone, and planted this and Ocymum sanctum, but without visible effect. "I took," he says, "much interest in the cultivation of the latter plant, which grew most vigorously tall, and not unlike our English Nettle. I may mention that I tried bundles of each variety in rooms at my house, and watched the result. I found numbers of mosquitos settled on the drying leaves, but, so far as my experience goes, I have no belief in either plant for exterminating mosquitos."

Ashton and the "Black Lad."—The usual ceremony of riding the "Black Knight," or the "Blake Lad," took place at Ashton-under-Lyne on April 24. Early in the morning a Blake Lad was to be seen riding about the principal streets, followed by a large crowd of people. The custom is one peculiar to Ashton-under-Lyne. It arose in the 15th century, and was established by Sir John de Ashton, Lord of the Manor of Ashton-under-Lyne, a branch of which family is still in existence at Downham Hall, Clitheroe. Owing to the lands being overrun with a



VIEW OF AN ORNAMENTAL BRIDGE, ERECTED BY MESSRS. PULHAM & SONS, IN THE GARDENS AT KINGSWOOD, SYDENHAM HILL, NR. LONDON.

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge.

destructive weed he appointed his son, Sir Ralph Ashton, to ride round and see that the tenants used all possible means to extirpate the weed. Tenants who neglected to do so were punished. What the weed was we are not told.

Wild Flowers.—Mr. F. E. Hulme, F.L.S., F.S.A., has prepared forty new drawings in colours of wild flowers, which will appear in the new and enlarged edition of his well-known work, *Familiar Wild Flowers*, the first part of which was published by Messrs. Cassell & Co. on April 27. In the new edition of this work there will be 320 full-page coloured plates, and in the first part is given an index in which all the flowers will be arranged according to their colour.

Objectionable Leaflets.—One of our contemporaries complains, with ample reason, against the practice of some newsagent or agents who inserted in its copies leaflets of an insulting character to the members of a particular Church. In another case betting circulars were introduced. Of course, our contemporary is in no wise to blame for these horrible procedures, and knew nothing about them till attention was called to the matter by outraged correspondents. As it is possible that similar malpractices may have occurred in our own case without our knowledge, we join with our contemporary in its protest.

"The Culture of Sweet Peas."—Under this title the Agricultural and Horticultural Association, 92, Long Acre, W.C., has published a *brochure* by Mr. Richard Dean, which is to be the first of a series of "One-and-All Practical Handbooks." It is a useful paper, already in its third edition, and should be well received by those with small as by those with large gardens. The information given is up to date and quite trustworthy. Various illustrations are included. Mr. Richard Dean writes with authority as one of the founders of the National Sweet Pea Society.

The Garden City Association. — According to the April issue of *The Garden City*, this Association is making considerable progress. The above-mentioned periodical contains an article by Mr. Thomas Adams on "Garden City in the making," in which he mentions the building of cottages and factories connected with the scheme. There are also pages relating to Mr. Cadbury's village of Bournville, on allotments for Londoners, and on how to make a garden, by Mr. R. C. Notcutt. Notes and news connected with the Association are also included. We notice that Messrs. Bemrose & Sons, of Snow Hill, E.C., are publishing a book by Mr. A. R. Sennett, entitled *Garden Cities in Theory and Practice*.

Kew.—Go when one may, one is always sure to see something interesting in the National Garden. Just now, in the little morass in the rockery devoted to the species of Meconopsis, M. integrifolia, with its large globe-like flowers of softest primrose-yellow, is very attractive. This is decidedly one of the finest introductions among hardy plants that has ever been made. There is also a plant of Aubrietia "A 1" in the rock-garden which is almost startling in the size and brilliancy of its flowers. It was raised, we believe, by Mr. Prichard, of the Christchurch Nurseries, and deserves to be better known. In the tank in the Victoria-house the stately Lissochilus Mahoni rears its elegant spike. Apparently it is very like L. giganteus, figured in the *Gardeners' Chronicle*, May 19, 1888, p. 617, but in the absence of a ladder or a lift it is not possible to examine the flower (see also *Gard. Chron.*, April 22, p. 250). Among other Orchids in bloom are Chloræa virescens, a beautiful terrestrial species, with spikes of yellow flowers streaked with red, and with the lip studded with short, strap-shaped processes. Cymbidium rhodocheilum is remarkable for its green flower-segments spotted with red and the pale carmine-coloured lip. Streptocarpus Haygarthi forms a fine group at one end of the T-range, and in the same range is now in flower a small plant of the highly curious and by no means unattractive Euadenia eminens, of which an illustration was given in the *Botanical Magazine*, t. 6578.

Horticultural Club.—Mr. E. H. Wilson has promised to read a paper entitled "Journeyings through China" at the next meeting of the Club on May 9.

Publications Received.—*Chelsea Window Gardening, or some Notes on the Management of Pot Plants and Town Gardens*, by L. M. Forster. An inexpensive and useful little pamphlet, published by T. Fisher Unwin.—*Bulletin of Miscellaneous Information, Trinidad*, April. Contents: Phosphoric acid required by Cacao; Cacao Disease; Cuba's Agricultural Experiment Station; How a small Settler should Cure his Coffee, &c.—*Agricultural Bulletin of the Straits*, February. Contents: Facts about Gutta-Percha, A. M. Burn-Murdock; Timber Trade in the Dindings, &c.

ORCHIDS AT KEW.

Epidendrum ciliare, *L.*—A grand specimen is now in flower. It forms a conical mass, composed of a large number of Cattleya-like growths, with pseudo-bulbs 6 inches in length, the leaves being from 6 to 8 inches long; the terminal racemes are four to eight-flowered, each flower having a diameter of 5 inches. The sepals and petals are rather narrow, and greenish-white in colour. The beautiful fringed lip is pure white, being the most prominent part of the flower. There are between seventy and eighty flowers open on this plant, making a very fine display.

Dendrobium undulatum, *R. Br.*

This species has very stout growths, 6 to 8 feet in height, with leathery leaves 3 to 4 inches long by 2 inches broad. The Kew specimen is now carrying six large racemes, the flowers of which are of brownish-yellow colour and about 2 inches in diameter, the sepals and petals being much undulated on the margins. The largest raceme on the plant is bearing forty flowers. The species is a native of N.E. Australia.

Dendrobium chrysotoxum, *Lindl.*

This well-known species is well represented by a finely flowered mass of growths, having a diameter of about 2 feet, and carrying eighteen spikes, each of which is composed of from twenty to twenty-five of its beautiful bright yellow flowers.

Other Orchids in Flower.

The following list is a selection from the large number of Orchids now in flower, and represents about half the total number:—Cyrtopodium punctatum, Cynorchis kewensis, Bulbophyllum falcatum, Megaclinium falcatum, Aërides Micholitzii, Lissochilus Mahoni, Oncidium leucochilum, O. exasperatum, O. Marshallianum, O. superbiens, Chloræa virescens, Epidendrum elegantulum, E. elongatum, E. glumaceum, E. kewense, E. O'Brienianum (this last-named species is a large plant, with growths 6 feet in height, the dense heads of bright red flowers being very handsome), Lælia Latona, Lælia-Cattleya highburiensis, Cattleya intermedia, Broughtonia lilacina, Maxillaria Sanderiana, M. flava, Dendrobium albosanguineum, D. atroviolaceum, D. Bensonæ, D. Devonianum, D. pulchellum, D. Loddigesii, Masdevallia O'Brieniana, M. simula, M. tridactylites, M. Chestertoni, Plocoglottis Lowii, Leptotes bicolor, Diacrium bicornutum, Eulophia delicata (n. sp. Rolfe), E. Keithii, E. andamanica, Odontoglossum retusum, and many well-known species of this genus; Mormolyce lineolata, Epiphronitis Veitchii, Aspasia lunata, Physosiphon Moorei, Saccolabium gemmatum, Dendrobium Parishii, D. hercoglossum, and Maxillaria sanguinea. *W. H.*

KINGSWOOD, SYDENHAM HILL.

[See Supplementary Illustration.]

The Supplementary Illustration to this issue affords a view of one of those ornamental structures found in pleasure grounds and gardens, and which, when utilised with good taste and with due consideration of their surroundings, are very effective. Kingswood, wherein is contained the scene depicted in our illustration, is a truly suburban residence. It is situated on the confines of the metropolis, on the borders of Kent and Surrey, at Sydenham Hill, the heart of a large residential neighbourhood, near to the famous Crystal Palace and its beautiful grounds.

The estate at Kingswood occupies an area of over thirty-two acres, most of which consists of lawns and grasslands, and is thus a moderately large demesne for one situated so near to the City of London. Unfortunately, it is at present unoccupied, and the small garden staff retained cannot do more than maintain the grounds in a degree of order. Although the estate cannot lay claim to be regarded as a show place, it nevertheless contains many interesting and picturesque features. The ornamental water, which is spanned by the bridge shown in our picture, has been formed with exceptionally good taste by Messrs. Pulham, and is a pleasant feature immediately opposite the mansion—a handsome castellated building faced with Kentish rag. A view from the bridge enables one to enjoy a fine panorama of the surrounding district. To the right can be seen the immense structure of the Palace, its glass roof on the occasion of our visit scintillating in the bright sunlight; to the left is seen the palatial building of Dulwich College, while nestling in the vale below and crowning the heights around are many other stately edifices standing in their well-wooded grounds. The water below winds its course here and there, interrupted now by a miniature island, and again by an abutment of ornamental rock-work, one of which is fashioned to resemble a miniature Merlin's cave, and forms an excellent boat-house. The late owner, J. Lawson Johnson, Esq., greatly favoured the use of ornamental rock-buildings in the grounds. A dripping pool constitutes a pleasing feature by the side of a walk, while on the terrace adjacent to the house are two fairy caves, down whose sides trickle tiny streams of water, the interiors of the caves having splendid imitations of stalactites and stalagmites, which one could easily imagine were produced naturally by the dripping water. Lower down the grounds is a well-modelled imitation of a ruined castle that forms a charming retreat, and from whose tower can be enjoyed a delightful view. Fountains too are placed on the lawns and by the side of the drives, and when the whole of these fantastic embellishments are illuminated by hundreds of electric lights at night-time the scene must be one of grandeur.

The glass-houses and gardens proper are not extensive, indeed the former are showing need of a new owner who would restore them to their former worth. One structure, the Camellia-house, is executed on well-proportioned lines, and forms a worthy adjunct to the mansion, while a very handsome conservatory is attached to the residence. The inmates of the houses are such subjects as are useful for summer bedding purposes — Hydrangeas, Fuchsias, Ivy-leaved and zonal Pelargoniums, &c.—and plants of decorative value in the residence. The Camellias are now at their best, while a batch of Azaleas were looking first-class, and demonstrated the capabilities of Mr. A. Thorn, the gardener, even with a reduced staff and an empty stoke-hole. Mr. Thorn has been connected with Kingswood for over fourteen years, and we hope the time may hasten when he will be allowed to exercise that pride in restoring the grounds and gardens which would be his delight.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

WALLFLOWERS.—I am sending a few specimens of two varieties of Wallflowers, Canary Bird and Kinver Favourite, which are greatly admired here. They are of dwarf, bushy habit, and come remarkably true to colour. *W. H. Shaw, Horsley Hall Gardens, Gresford, April 27.* [The flowers of the varieties Canary Bird (colour golden-yellow) and Kinver Favourite (colour deep crimson) are exceedingly good. ED.]

TACSONIA MOLLISSIMA FRUITING IN THE OPEN.—When at Falmouth in the first week of April I noticed that a climber on a cottage about a mile from Helford River Passage was bearing a number of white, egg-shaped fruits. Entering the gateway and walking through the small garden to the house I found that the plant was Tacsonia mollissima. I was told by the occupier that it usually fruited, and was given two of the seed-pods. These were ivory-white in colour, and about 3½ inches in length, and were filled with ripe seeds. I have no doubt that this Tacsonia has fruited in other gardens as there are large plants at Trebah, close to the cottage referred to, and also in Mr. Howard Fox's garden at Rosehill, Falmouth; but I have never personally met with it fruiting in the open before. *S. W. Fitzherbert.* [Tacsonia mollissima has usually elongate fruit, tapering at both ends, and of a greenish-yellow colour. ED.]

BLACK CURRANT BUD-MITE.—I purchased some three years ago three varieties of Black Currant-bushes from a nursery which became badly infested with the mite. All the affected buds were picked off the first season, then the trees were cut to the ground in the winter. The following season each shoot which grew up from below was infested with mite. The trees I have dug up and burnt this spring. Two months ago I visited the nursery from which the purchase was made, and to my surprise I saw that the whole stock of Black Currant-trees in this nursery was infested with the mite. Now I am wondering how many gardeners and market-growers have purchased their stock from infested sources, and if there is any nursery in England where clean, healthy young Black Currant trees can be bought. What can be done to prevent nurserymen sending knowingly infested stock to different parts of this and other countries when executing orders? *Head Gardener.*

CUCUMBER SPOT.—Mr. Ward, in a letter in the issue for April 22, stated that I unwittingly misrepresented him by attributing to him the suggestion that among other causes likely to invite an attack of this disease was the heavy cropping of the plants in market gardens as compared with the lighter cropping practised in private gardens, where the disease is practically unknown. The following is what Mr. Ward said in the issue for February 18 in commenting on the freedom from the disease enjoyed in private gardens:—"Moreover the plants in private gardens are cropped lightly, the young fruits being thinned out, the object being to obtain a regular supply of a few dozen fruit a week from a given number of plants, say a period of five months, whereas the object of the grower for market is to take all the saleable Cucumbers that the plants under skilful and generous treatment are capable of yielding in as short a time as possible." On reading the above in a discussion on the probable cause of this disease of the Cucumber most people, I think, would take it to mean that Mr. Ward wished to infer that the over-cropping and over-forcing of the plant in market gardens, with the natural consequence of the more or less enfeeblement of the plants, might be taken as a contributing cause to its presence in market gardens, and its absence in private gardens. If this was not his intention, it is difficult to understand the reason why he wrote the paragraph in this connection. *O. Thomas, April 29, 1905.*

ANTI-DRIP APPLIANCES.—In reply to Messrs. Foster & Pearson's remarks on p. 234 in the issue for April 15, I may say that I can get the inch beading as illustrated on p. 86 in the issue for February 11 already bevelled for the cost mentioned, and where the rafter is in good condition why not save the extra expense? Gardeners should spend their employers' money as they would their own, then I think in many cases necessities would not be debarred them. The method I adopted at Brentwood answers well; the rafters are practically new, it being only the putty that was at fault. *F. G. Brewer, Bryntirion Gardens, Bontddu, Dolgelly.*

RAISING APPLE STOCKS.—I do not think the raising of stocks for grafting by cuttings will ever become popular. I have inserted many of various kinds, but with ill-success. If they make roots they fail to grow with sufficient vigour to have any value as stocks. Manx's Codlin I found succeeded best; but even that makes sorry progress as a tree. If amateurs are at all wishful to raise their own stocks for grafting choice or favoured varieties upon it would be far better for them to collect the seed or pips from ordinary Apples. Sow the seed early in spring in sandy soil in a box in a cold frame. The seedlings will soon push through the soil, and if planted out early in the autumn will quickly grow large enough to receive a graft. *E. M.*

POTATO PRICES.—Whatever may be the cause of the extraordinary low prices of seed Potatos just now, it is certain that they are not due to foreign competition. It is doubtful whether prices ever were lower; indeed, it seems incomprehensible when we remember the mad efforts made last year to obtain the highest prices ever heard of in connection with seed tubers, that now they should have fallen to the lowest on record. Even the famous Northern Star is quoted in all directions at but 5*s.* per 112 lb., and it would seem even at that very low figure it does not find purchasers. If there be not planted this year immense breadths of Potatos, seed tubers being so cheap, it will be because this very cheapness in the trade just now exists. But no one should be discouraged from planting for that reason; we may see a big demand for seed Potatos another year. The Potato trade is doubtless feeling that depression which has been felt by all trades. Still, all past experience shows that periods of depression are few and relatively brief. The wisest man now may be he who plants most largely. *N. P. S., April.*

APPLES FROM THE CAPE.—If we may judge these by the specimens shown at the recent Colonial Fruit Show of the Royal Horticultural Society, they are inferior to home-grown fruits in appearance, as they all lack colour; and I doubt if they are half so good in flavour as our own. Moreover, after such an abundant crop as we had last year, we might easily have plenty of our own; it is chiefly a matter of care in gathering and in providing suitable storage. I have still a good lot of fruits of Barnack Beauty left which will last for dessert a considerable time, and fruits of Blenheim Pippin, Cox's Orange Pippin, Ribston Pippin, Rosemary Russet, and Duke of Devonshire are as plump as when they were gathered, and of excellent flavour; those who enjoy a sharp Apple would add the Old Northern Greening to those enumerated above; it is one of the best keepers, and fit for dessert at this time of the year. Cooking varieties still fresh and good comprise Newton Wonder, Alfriston, New Northern Greening, Old Northern Greening, Bramley's Seedling, and Hormead's Pearmain. Too little attention is paid to the arrangement of the fruit store-room when the garden offices are built. One often sees it erected over other buildings, or arranged behind the forcing-houses, instead of being placed in the coolest position that can be found. *W. H. Divers, Belvoir Castle Gardens, Grantham, April* 20.

POTATO PLANTING AND POTATO SPROUTING.—The dibble was generally used amongst the crofters of Scotland twenty years ago, and suited admirably in light soils; but on heavy lands it made a hard, case-like enclosure for the seed-tuber. However, as Mr. Jefferies stated, the "thorough working of the soil" is the best means to obtain success. According to statistics given by the agricultural instructors of the Irish Department of Agriculture, both early and late varieties of Potatos yield larger crops of good Potatos when tubers have been sprouted before planting, the difference being sufficiently great to pay for the cost of trays, extra labour, &c., in the first year. The increase per acre is from 31 cwt. to 4 tons. These figures speak for themselves. Counties so far apart as Down and Wexford are satisfied as to the increase of a superior sample of Potatos resulting from the sprouting system. In the *Farmers' Gazette*, April 1, Dublin, a report by Mr. Megaw (Down) respecting the advantages of planting sprouted seed contained the following paragraphs:—"(1) It is the safest possible system of storing seed Potatos; under no other system will seed be kept so sound and free from rot. (2) The tubers which do not sprout properly are seen, and can be laid aside when planting is being done. (3) In a wet and backward spring planting could be deferred even until late in May, so as to have the ground in good order. When the seed is well sprouted the crop will be as far advanced in growth as it would be from seed planted in the ordinary way a month earlier, the farmer would therefore be less at the mercy of a backward spring. (4) Because of the rapid growth of the crop, weeds are more easily kept under. (5) The Potatos, owing to maturing early, will be of better table quality." It is all very simple and reasonable, and I am sure under the weight of evidence conservative ideas and prejudices must give way. Those of the Irish farmers who wish to be up to date have adopted the system, and mean to stick to it as long as it yields the best returns. *A. Pearson, Co. Cork.*

THE ALLEGED DETERIORATION OF VARIETIES.—The facts you record in paragraph 1, p. 264, are extremely important, and I do not know that they have been previously stated so definitely or so clearly in print. May I suggest one point where I think there is room for a little more information? In the first place every seedling Potato is, of course, the result of sowing one grain of seed; this grain of seed produces a plant, and under the plant are a certain number of tubers. You state that "no two tubers on the same haulm are [exactly] alike, and thus we get from the beginning a source of variation." Now it is quite true that there is always some variation in the shape or size of tubers attached to the haulm of any Potato plant, due probably to the period of the plant's growth at which the tubers began to be formed, but the difference is chiefly that of size, though there is always some slight variation in shape. Your words "no two tubers on the same haulm are [exactly] alike," may possibly lead to misunderstanding, because all seedling-Potato raisers know quite well that each of these tubers, notwithstanding any irregularity of shape, is essentially identical with the others, and if planted side by side will, in the following year, give plants which are [for practical purposes] absolutely identical in every characteristic. The consequence of this is that whether in the second year the raiser plants one of the original tubers or all the original tubers, the result will be the same, and without any opportunity for variation. I quite accept your statement that the Potato plants and tubers of one year's growth cannot correctly be termed "portions" of the plants of the previous year, but nevertheless there is much to be said for their "identity," for the seed-tuber or set does not disappear in the ground until it has given its own life to the new plant, and experience shows that this new plant never varies from the plant of the previous year, any more than a cutting of Pelargonium varies from the plant from which it is taken. It is also noteworthy that a Potato plant raised from a tuber in the ordinary way corresponds as identically with the plant of the previous year as does a Potato plant raised from a stem-cutting made in the same year. Another point to which I think you do not allude, but which is obvious, is that in any period of its growth it is as possible for a Potato plant to "sport," as to variation of colour, as for any other plant to do so; but so far as my experience goes there is no evidence of any "sports" having been observed, except as regards the colour of the tuber. *Arthur W. Sutton.*

CARNATION "ELIZABETH."

THE Tree Carnation illustrated at fig. 116 is a seedling obtained from the variety America. It possesses a well-balanced flower of a clear bright cherry-red colour, with a non-splitting calyx, and is very free-flowering in habit. Flowers were shown by Sydney Morris, Esq., Wretham Hall, Thetford, at the meeting of the Royal Horticultural Society on the 25th ult., when it was given an Award of Merit.

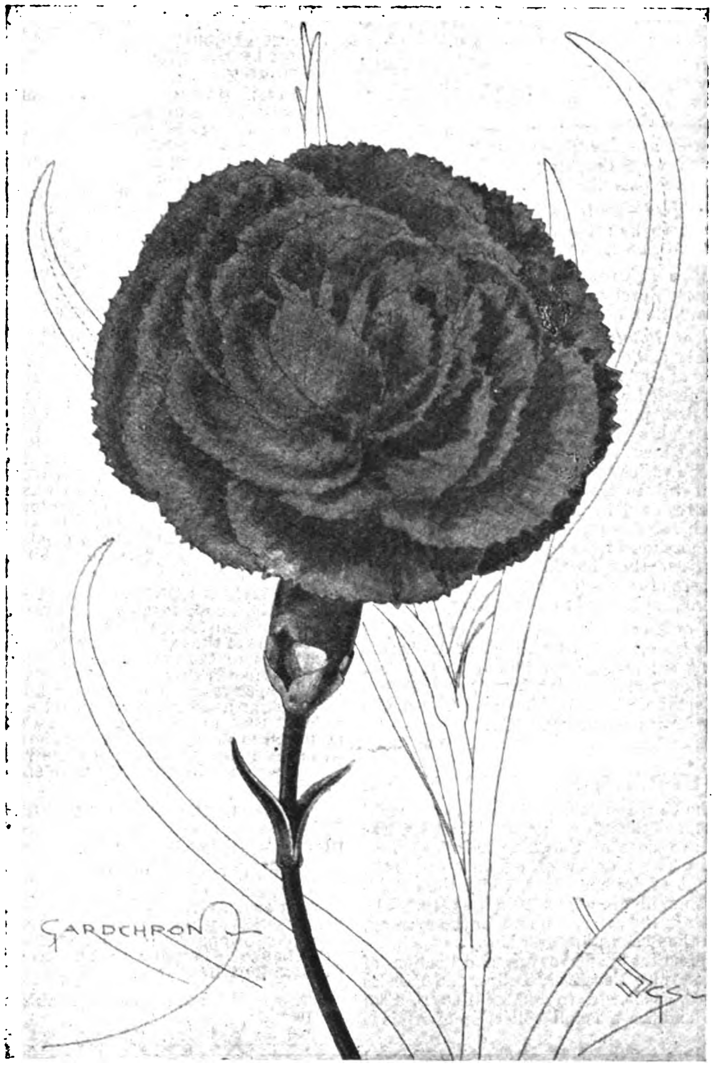


FIG. 116.—TREE CARNATION ELIZABETH: COLOUR OF FLOWER CHERRY-RED.

NURSERY NOTES.

MESSRS. TRESEDER & CO., TRURO.

WHILE on a visit to Falmouth for the purpose of attending the Cornwall Daffodil Society's show at Truro early in April, I took the opportunity of inspecting Messrs. Treseder & Co.'s nursery near that town, being anxious to see what tender plants suitable for open-air culture in the south-west were included in the collection. Messrs. Treseder make a speciality of tree Ferns, and in many gardens in South Devon and Cornwall, such as Bosahan, Trebah, Menabilly, Trewidden, Greenway, Elfordleigh, and others, numerous fine specimens supplied by the firm are to be seen luxuriating in the best of health.

A large structure, whose roof and walls are covered with laths that provided shade while admitting air, contained a number of tree Ferns and other tender subjects. Fourteen species of Eucalyptus are grown, and of these Mr. Treseder especially recommends E. "Beauchampiana" as one of the hardiest. Several Acacias are stocked amongst these being the new A. Baileyana; and amongst the Olearias I noted the Musk-leaved O. argophylla, formerly classed as Aster, which is fairly common in the south-west. The Callistemons, generally catalogued by nurserymen as Metrosideros, included C. lanceolatus, C. rigidus, and C. linearis, and the quaintly foliaged Australian Casuarina quadrivalvis was also present. Of this I know a fine specimen about 12 feet in height, which has been unprotected in a South Devon garden for many years.

Among the Pittosporums were included P. nigrescens, P. undulatum, P. eugenioides, and P. e. variegatum. Numbers of small plants of Benthamia fragifera, now called Cornus capitata, were in evidence, and the same may be said of the splendid Embothrium coccineum, the most brilliant of all flowering trees, Cornish examples, 20 feet and more in height, being in the month of May sheets of glowing scarlet. That fine foliaged New Zealand shrub, Brachyglottis repanda, formerly called Senecio Fosteri, was remarked. The flowers of this shrub have been said to be inconspicuous and unattractive, but a large panicle about a foot in diameter, exhibited in the 2nd prize stand of hard-wooded plants at the late Plymouth Daffodil show, was very delicate and distinct.

Of tender climbers the Hardenbergias drew attention Of these H. monophylla, with blue flowers, H. candidissima, with white blossoms, and H. nigricans, which appears identical with Kennedya nigricans, were noted. In one or two gardens these are grown in the open. Polygonum complexum, the climbing Maidenhair from New Zealand, was also present, as was the bright-flowered Berberidopsis corallina.

Among other noteworthy plants were Anigozanthus flavidus from New Holland, the graceful Grevillea pendula and Coronilla glauca pygmaea, while of better-known subjects the collection comprised Boronia megastigma, which in Cornwall attains to a height of over 4 feet in the open; Clianthus puniceus, Desfontainea spinosa, Fabiana imbricata, Calceolaria violacea, Ozothamnus rosmarinifolius, Cassia corymbosa and C. Decandolleana, the Australian Tristania conferta, Myoporum lætum, Melaleuca ericifolia, Smilax glycyphylla, and Edwardsias or Sophoras, none of which are hardy in the open except in the south-west. There was a good collection of Rhododendrons and herbaceous and rock plants; Roses, greenhouse plants, fruit-trees, coniferæ, aquatics and hardy shrubs and trees were also present in quantity. *S. W. Fitzherbert.*

ODONTOGLOSSUM × THOMPSONIANUM.

THIS remarkable hybrid was shown at the Royal Horticultural Society's meeting on April 25, by W. Thompson, Esq., Walton Grange, Stone (gr., Mr. W. Stevens), when it was recommended a First-class Certificate. The flower was of a rich claret-purple colour tipped with rose at the margins, and was 2½ inches in diameter. The inflorescence was tall and branched, while the pseudo-bulbs were tinted with purple, similar to those of O. Edwardii. The lip of the flower possesses a yellow crest.

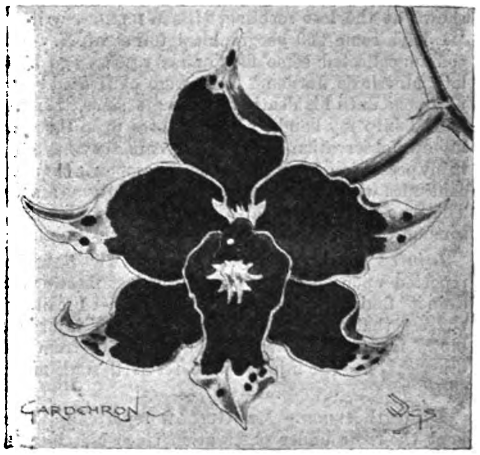


FIG. 117.—ODONTOGLOSSUM × THOMPSONIANUM.

THE APIARY.

Fitting-up Sections.—A little skill is required in fitting-up sections, as those who have tried to do the work know to their cost. Few joints will break however if the following method be adopted: Take say a hundred sections as received in the flat, and have some clean water boiling on an oil stove or gas ring; wet the joints of the sections well on both sides with a paint-brush, and place them, when wetted, in a pile. When the whole have been under this process, overturn the pile, and fit up with whole sheets of extra-thin foundation.

Fitting up the Section Rack.—In placing the sections in the rack put a metal divider between each line, and, when they are all in, wedge up as tightly as possible, because the bees will fill up all crevices between the sections with a sticky substance termed propolis. This will give the sections a dirty appearance in addition to providing a great deal of unnecessary labour.

Wrapping up the Rack when on the Hive.—It is seldom that beginners realise how necessary it is that section racks should be packed tightly all-round, and have a good covering of quilts on the top. A very skilled bee-keeper that I know has advised me to try the effect of a sheet of brown paper between the quilts. He had tried it last year and the results were excellent.

How to get Bees into Sections. — Every one knows how difficult it is generally to get the bees to work up in sections. A few years ago a number of experienced bee-keepers were discussing the question, and one of them said he always placed shallow frames (with drawn-out comb) on first. The bees took readily to them, and when well started the section racks were substituted. I have tried the plan, and find that there is a distinct gain. *Chloris.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

APRIL 25.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair); Dr. M. C. Cooke, Prof. J. Percival; Messrs. Saunders, Bowles, Güssow, Sutton, Holmes, Douglas, Massee, and Chittenden (Hon. Sec.)

Malformed Iris.—Dr. MASTERS showed a sketch of the stamens of the flowers of Iris tuberosa, brought to the last meeting by Mr. WORSLEY. The filament had branched so that each stamen bore two anthers.

Forms of Narcissus Bulbocodium.—Regarding these shown at the last meeting, Miss WILLMOTT writes:—"I have some 200 geographical forms of N. Bulbocodium collected some fifty or sixty years ago by the late M. Alexis Jordan. They were cultivated by him at Lyons until his death, a few years since, then they passed into my hands. By his notes upon them, and my own observation during the years they have been in my possession, I find that the same amount of variation continues which M. Jordan observed fifty years ago. The time of flowering also varies by several weeks in some of the forms."

Injured Horse Chestnut Shoots.—Mr. SAUNDERS reported upon these shown at the last meeting: "I cannot find any cause for the injury. I can only suggest that the shoots may have been injured by blows from other branches in a gale, or from some other cause. The injuries were received some months ago."

Diseased Arums.—Mr. GUSSOW reported: "I have kept the roots under observation since March 28, but could not discover any cause of the injury whatever. The bacteria present in the decayed portion at the base of the tuber were saprophytic. . . . The plant should be kept dry for a period, and then transplanted into fresh sandy soil containing some charcoal. After forming new rootlets they should be transplanted and cultivated in the ordinary way.

Striped Auricula.—Mr. DOUGLAS showed a plant raised by Mr. Horner from seed from a dark-red flower. The seedling at first bore yellow flowers, but later the flowers produced were striped with dark red. Offsets from the plant had, with one exception, borne yellow flowers.

Primrose Malformed.—Mr. A. W. SUTTON brought specimens which had been raised by division from the plant shown before the Committee two years ago, in which "the umbel was partly formed, but with multifold flowers of twelve parts, and with a partly petaloid calyx, &c." The original plant was found in a wood close to Bucklebury Place, Berks, and seventy or eighty plants have been raised from it by division. Four of the plants have reverted to the common Primrose, and show no variation whatever from the ordinary type. All the rest have partly formed umbels with multifold flowers, with the exception of three or four, which more or less closely resemble the form of the Polyanthus. The plants, after division, have been left to the care of themselves, planted under an east wall on poor soil.

Double Primrose.—Mr. SUTTON also showed double flowers of Primrose gathered from a plant growing wild.

Ranunculus asiaticus var. sanguineus.—Mr. SUTTON also submitted specimens of the single wild Ranunculus asiaticus, "which is, perhaps, the commonest wild flower of Palestine, where the plains are frequently carpeted with it. This is so much the case on the plain of Sharon that it has by many travellers been supposed to be the 'Rose of Sharon' of Scripture. Wherever this Ranunculus grows it is preceded in bloom by the single Anemone, which flowers some two or three weeks earlier. As the single form of the Ranunculus is seldom seen in England, travellers usually confuse the two plants and speak of both as Anemones. The Anemones are generally of the same colour as the Ranunculus, but in certain localities produce flowers of the most lovely shades of mauve, purple, cerise and white." The Ranunculus shows little variation, but forms with orange or bronzy-yellow flowers are occasionally met with. Mr. BOWLES said he had flowered the plant in his garden last year.

Spur of Dendrobium.—Dr. MASTERS showed drawings of a flower of Dendrobium chrysotoxum, received from Mr. BOWLES, in which the spur had not developed fully. The structure seen in this flower clearly showed that the spur is not an outgrowth of the sepal, as is usually supposed, but is partially an axial structure.

Meconopsis integrifolia. — This newly-introduced plant, shown by Messrs. VEITCH, was, on the motion of Dr. MASTERS, seconded by Professor PERCIVAL, awarded a Botanical Certificate.

Diseased Montbretia.—Mr. BOWLES showed corms of Montbretia which were decaying at the base. Mr. MASSEE undertook to examine them.

Apple-buds Injured.—These sent by Mr. DUNLOP, Armagh, appeared to be eaten away at the sides, and were taken by Mr. SAUNDERS for examination.

Fruit tree Twigs Injured. — Shoots of Apple and Pear having poorly-developed and injured buds were taken by Mr. SAUNDERS for examination.

Deterioration of Potatos.—In continuation of the discussion on this subject, Mr. A. W. SUTTON said that the length of time any variety lasted without deterioration depended very largely upon its vigour at the time of its first production; he found that, as a rule, cross-bred plants were less likely to degenerate than those from seed produced from flowers fertilised by pollen of the same variety; he had never found that the selection of tubers from the stock of any one variety had ever resulted in the improvement of that variety, although, of course, the selection of plants which had been produced from seed was all-important. Professor PERCIVAL thought that there were well-authenticated cases of sports (or bud variations) having arisen which were perpetuated after selection.

Coloured Leaf of Richardia.—Mr. CHARRINGTON, of Bury's Court, Reigate, sent a specimen of Richardia Elliotiana having a large yellow blotch on the leaf which left the flower-stalk just below the spathe—a kind of second spathe. This specimen has shown the same peculiarity for the past three years.

CROYDON SPRING FLOWER SHOW.

APRIL 19.—The Croydon and District Horticultural Mutual Improvement Society's Spring Exhibition was held on the above date at the Art Galleries, Park Lane, Croydon. The number of exhibits displayed was equal to that of former years, while the exhibition generally showed an advance in quality. The attendances, both in the afternoon and in the evening, were the largest the Society has ever had.

One of the prettiest displays was a collection of hardy flowering shrubs, Narcissus, Tulips, and Pansies set up by Mr. E. Mills, gr. to FRANK LLOYD, Esq. Mr. LLOYD also showed a small collection of Alpines in pots.

Messrs. J. R. BOX & Co., of West Croydon, showed a collection of Narcissi, mostly new varieties, among them being the variety Van Waveren's Giant.

Mr. J. FILCE, of 27, Handcroft Road, showed Tulips, Forget-Me-Nots, and Auriculas.

A capital exhibit of Narcissi and Alpine plants came from Messrs. J. CHEAL & SONS' nurseries, Crawley; whilst probably the most effective display in the building was that made by Mr. J. R. BOX, of West Wickham, with alpine plants, comprising seventy or eighty varieties, all named, arranged on a rocky groundwork.

Mr. R. A. LAING, of Shirleyhurst, Radcliffe Road (gr., B. Acock), displayed a collection of Primula obconica and Clianthus Dampieri.

Miscellaneous groups of plants, tastefully arranged, were exhibited by F. R. DOCKING, Esq., of Grafton House (gr., Mr. D. J. Ricketts), and GEO. CURLING, Esq., of Elgin House, Addiscombe (gr., Mr. W. Bentley), the last-named gentleman's display including specimens of the beautiful Crinum Moorei.

Messrs. JOHN PEED & SON, of West Norwood, were represented by a collection of Alpine and other plants in pots. Mr. J. J. MACDONALD, of Armadale, Howard Road, South Norwood, showed a charming basket of flowers; and Messrs. E. W. & S. ROGERS, of Croydon, a collection of Hyacinths and Daffodils.

Amaryllis and Orchids were the principal feature of a group of plants shown by Mr. WICKHAM NOAKES, of Selsdon Park (gr., Mr. Bye). A display of Orchids was also set up by Mr. F. W. A. RADFORD, of Southernhurst, Park Hill Road (gr., Mr. Padley).

A collection of Cinerarias was shown by J. PASCALL, Esq., of Ambleside, Addiscombe (gr., Mr. A. Edwards); while Mr. T. BUTCHER, of Croydon and South Norwood, was represented by a group of plants, with a tasteful shower bouquet at one end of the group, and a basket of flowers at the other.

Mr. JOHN GREGORY displayed a decorative fireplace, which was quite one of the best artistic arrangements in the show.

GARDENERS' DEBATING SOCIETIES.

SHIRLEY (SOUTHAMPTON) GARDENERS'.—Nearly fifty members of the above Association were present at the monthly meeting on Monday, April 17. The evening was devoted to a debate on "Carpet Bedding." Mr. Risbridger, of The Gardens, Rownhams Mount, opened the debate with a speech in favour of carpet bedding, and he was followed by Mr. Wilcox, of The Gardens, Aldermoor House, who was opposed to this form of gardening. A brisk discussion followed. There were several exhibits of Daffodils at the meeting, those shown by Mr. Wilcox and Mr. Cook being especially noteworthy.

BATH GARDENERS'.—A meeting of the above Association was held on April 13, Mr W. F. Cooling in the chair. Mr. F. W. E. Shrivell, F.L.S., delivered a paper on "Up-to-date Manuring." The lecturer pointed out the increasing difficulty of obtaining good organic manures owing to the lessening use of the horse through the growth of trams and motor-cars. His opinion was that chemicals could not entirely replace organic products, and condemned mixing soot with lime, for the ammonia was lost by so doing. Mr. Edwin Ponter was elected a Vice-President. Clevedon was suggested for the Society's summer outing, but a decision was deferred until the next meeting.

BRISTOL AND DISTRICT GARDENERS'. — The seventh annual meeting of this Association was held on Thursday, April 27, Mr. P. Garnish presiding. Mr. W. Ellis Groves presented the report and balance-sheet, which showed that the Society was still maintaining its position as one of the foremost of gardeners' mutual improvement associations. Colonel Cary Batten was again unanimously elected President, while Mr. Lee was elected Chairman for the ensuing year, and Mr. Curtis, Vice-Chairman. Mr. W. Ellis Groves, on being re-elected Secretary, received a unanimous vote of thanks. Mr. H. Kitley was invited to again act as his assistant. The remaining officers and committees were also elected. The competition for three flowering plants brought a good number of entries, 1st prize being awarded to A. Shipley, Esq. (gr., Mr. Wakefield). *H. K.*

WORTHING HORTICULTURAL.—At the April meeting of the above Society Mr. Evans, head gardener to the Borough Corporation, addressed the members on the value of the Coniferæ for town planting. Different varieties of Conifers were mentioned, but particular attention was directed to the advisability of planting Pinus species, mentioning that Bournemouth owed its reputation as a health resort to their presence. It was stated that in a report to the Council Dr. P. W. G. Nunn, the medical officer for the district, emphasised the necessity for replacing trees which have been cut down, and advised the appointment of a skilled arboriculturist.

REDHILL, REIGATE AND DISTRICT GARDENERS'.—The last of this Society's meetings for the season was held on Tuesday, April 25, Mr. W. P. Bound in the chair. Mr. Horace Wright delivered a lecture on "Exhibiting." Mr. Wright advised all exhibitors to make themselves thoroughly acquainted with the rules laid down in the schedule, as many exhibitors find themselves disqualified owing to want of knowledge of the conditions contained therein. The lecturer also dealt at some length with the method of staging plants for exhibition. *F. C. L.*

MARKETS.

COVENT GARDEN, May 3.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	2 0- 2 9
— Jerusalem, p. sieve	0 9- 1 0
Asparagus, bunch	5 0 —
— Giant	8 0-10 0
— Paris Green...	2 3 —
— Spanish, bunch	0 11 —
— Sprue, p. doz.	5 0 —
— Toulouse, bch	1 6- 1 9
Beans, dwarf, per lb.	0 8 —
— Channel Island	0 10-1 0
— Canary, Broad per basket ...	1 6 —
Beetroot, bushel	2 0- 3 6
Broccoli, Sprouting, bag	1 6 —
Cabbages, p. tally	3 0- 5 0
Carrots, 12 bunch.	3 6- 4 0
— new	0 8 —
— bag	10 0 —
Cauliflowers, doz.	0 9- 2 6
Cress, doz. pun.	0 9 —
Cucumbers, doz.	1 9- 3 6
Endive, per doz.	1 0- 1 6
Garlic, per lb. ...	0 3- 0 4
Greens, bushel ...	0 9- 1 0
Horseradish, per doz	9 0-12 0
Mint, per dozen...	3 0- 4 0
Leeks, per dozen bundles	2 0- 3 0

	s. d. s. d.
Lettuces, Cabbage, per dozen ...	0 10-1 3
Mushrooms (house) per lb.... ...	0 5- 1 0
Onions, pickling, per sieve ...	5 0- 6 0
— Egyptian, cwt.	6 6- 7 0
— English, cwt.	12 0-16 0
— Green, p. doz.	3 6 —
Parsley, 12 bunch.	2 0- 3 0
Peas, French, pkt.	0 3- 0 6
per 10 kilos	7 0 —
— Frame, per lb.	0 9- 1 0
— Flats	5 0- 6 0
Potatos, per ton	80 0-90 0
— Frame, lb. ...	0 3 —
— Algerian, cwt.	14 0 —
— Teneriffe, cwt.	10 0-12 0
Radishes, p. doz. bunches ...	0 5- 0 7
Rhubarb, York, dz.	1 0- 1 4
— Natural, doz.	1 6- 2 0
Seakale, per doz.	14 0-16 0
Shallots, p. sieve	8 0 —
Spinach, bush. ..	1 6- 2 0
Tomatos, bundle	12 0-18 0
— English, p. lb.	0 8- 1 0
Turnips per doz.	1 6 —
— per bag ...	2 0 —
— new, bunch...	0 8 —
Vegetable Marrows, per doz. .	7 0-10 0
Watercress, per doz. bunches.	0 4- 0 7

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, per doz. bunches, coronaria ...	2 0- 3 0	Freesias, per doz. bunches ...	2 0- 4 0
— fulgens ...	2 0- 3 0	Ixias, per dozen bunches... ...	2 6- 3 0
Carnations, per doz. bunches ...	9 0-12 0	Marguerites, per doz. bunches ...	2 0- 3 0
Fern, French (Asplenium adiantum nigrum), p. dozen bunches	6 0 —	Roses, per basket	4 0- 5 0
		Stocks, double white and pink, dozen bunches	3 0- 4 0

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6- 0 9	Galax leaves (American), per dozen bunches.	1 6- 2 0
— — medium, each ...	0 4- 0 6	Ivy-leaves, bronze	1 6- 2 0
— — short sprays per bunch...	1 0- 2 6	— long trails, per bundle ...	1 0- 2 0
— Sprengeri ...	0 9- 1 6	— short green, doz. bunches	1 0- 1 6
— tenuissimus ..	9 0-12 0	Moss, per gross...	5 0- 6 0
Adiantum cuneatum, doz. bun.	4 0- 6 0	Myrtle, doz. bun.	3 0- 4 0
Croton leaves, doz.	1 0- 1 6	Smilax, p. dozen trails	4 0- 6 0
Cycas leaves, each	1 6- 2 0	Hardy foliage (various), per dozen bunches	3 0- 4 0
Fern, English, p. dozen bunches	3 0- 4 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia armata, doz.	9 0-12 0	Ficus elastica, p. doz.	9 0 12 0
Aralia Sieboldi, p. dozen	4 0- 6 0	— repens, p. doz.	6 0- 9 0
Araucaria excelsa, per dozen ...	18 0-30 0	Fuchsias, p. doz.	6 0- 8 0
Aspidistras, green, per doz. ...	18 0-24 0	Genistas, per doz.	5 0- 8 0
— variegated, per doz. ...	30 0-42 0	Heliotropes, per dozen	5 0- 8 0
Azalea indica, doz.	30 0- 60 0	Hydrangea, Thos. Hogg, p. doz.	12 0-18 0
— mollis, p. doz.	18 0-24 0	— Hortensia, p. dozen	10 0-15 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	Kentia Belmoreana, per doz...	12 0-18 0
— Sprengeri, doz.	8 0-12 0	— Fosteriana, p. doz.	12 0-21 0
— tenuissimus per doz. ...	8 0-10 0	Latania borbonica, per doz. ...	9 0 15 0
Bedding plants, store boxes, each	1 0- 1 6	Lilium Harrisii, per dozen ...	12 0-18 0
Begonia Gloire de Lorraine, doz.	12 0-18 0	Marguerites, per dozen	6 0-10 0
Boronia elatior, per dozen ...	12 0-24 0	Mignonette, doz.	5 0- 8 0
— heterophylla.	18 0-24 0	Pansies, per box ..	1 0- 3 0
Calla æthiopica, per doz. ...	4 0- 6 0	Pelargoniums, per doz., Show.	12 0-18 0
Cinerarias, p. doz.	5 0- 8 0	— Ivy-leaved ...	6 0- 8 0
Crotons, per doz.	12 0-30 0	— zonal	4 0- 6 0
Cocos Weddelliana, per doz. ...	18 0-30 0	Rhodanthe, doz.	5 0- 6 0
Cyclamen persicum, per doz.	15 0-24 0	Rhododendrons, per dozen ...	24 0-30 0
Cyperus alternifolius, p. doz.	3 0- 5 0	Roses, H.P.'s, per dozen	9 0 18 0
— laxus, p. doz.	3 0- 4 0	— Crimson Rambler (large), each	3 6 5 0
Dracænas, p. doz.	9 0-24 0	Saxifraga pyramidalis, per doz.	12 0-15 0
Ericas, per doz....	12 0-30 0	Spiræa japonica, per doz. ...	4 0- 9 0
Euonymus, dozen	4 0- 9 0	Stocks. Intermediate, per doz.	4 0- 6 0
Ferns, in thumbs, per 100... ...	8 0-12 0	Verbena, Miss Willmott, doz.	10 0-12 0
— in 48's, p. doz.	4 0-10 0		
Ferns, in 32's, doz.	12 0-24 0		
— hardy roots ...	0 6- 1 0		

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Azalea Fielderi, per doz. bun..	3 0- 4 0	Lilium longiflorum ...	2 0- 3 0
— mollis, dz. bun.	9 0-12 0	-- tigrinum ...	2 0- 2 6
Bouvardia, per doz. bunches	6 0- 8 0	Lily of the Valley, dozen bun. ...	9 0-18 0
Calla æthiopica, per doz. blooms	2 0- 3 0	Marguerites, per doz. bunches, white	3 0- 4 0
Camellias, per dz. blooms	1 6- 2 0	— yellow... ...	3 0- 5 0
Carnations, p. dz. blooms, best American vars.	2 6- 5 0	Mignonette, doz. bunches ...	4 0- 6 0
— smaller do. ...	1 0- 2 0	Narcissus, p. doz. bunches, Pheasant's Eye ...	1 0- 2 0
— Malmaisons...	8 0-12 0	Odontoglossum crispum, pr. dz. blooms	1 6- 2 0
Cattleya, per doz. blooms	10 0-12 0	Pelargoniums, p. doz. bnchs.	
Daffodils, per dz. bunch., single yellow ...	2 0- 4 0	— Show	4 0- 6 0
— double. do. ...	2 0- 3 0	— Zonal, double scarlet ...	4 0- 8 0
— Barrii conspicuus ...	3 0- 4 0	— salmon & pink	4 0- 6 0
— bicolor... ..	2 0- 4 0	Poppies, Iceland, dozen bunches	6 0- 9 0
Dendrobium nobile, doz. blooms	1 6- 2 0	Roses, 12 blooms, Niphetos ...	1 0- 3 0
— Wardianum ..	1 0- 2 0	— Bridesmaid...	3 0- 5 0
Eucharis grandiflora, doz. blms.	4 0- 6 0	— Kaiserin A. Victoria ...	2 0- 4 0
Gardenias, per dz. blooms	0 9 1 0	— General Jacqueminot ...	1 0- 2 0
Gladiolus Colvillei, per bunch ...	1 0- 1 6	— C. Mermet ...	3 0- 4 0
Gypsophila, per dozen bunches	3 0- 6 0	— Caroline Testout	3 0- 6 0
Iris, Spanish, per doz. bunches	2 0- 3 0	— Liberty ...	3 0- 5 0
— best English grown, bunch of 12 stems ...	1 0- 1 3	— Mad Chatenay	4 0- 7 0
Lilac (English forced), per bun.	2 0- 3 0	— Mrs. J. Laing.	2 0- 4 0
Lilium auratum, per bunch ...	2 6- 3 0	— Sunrise ...	1 6- 2 6
— candidum, p. bunch	1 0- 1 6	Stephanotis, doz. trusses ...	2 0- 2 6
— lancifolium, rubrum and album... ...	2 6- 3 6	Sweet Peas, doz. bunches ...	4 0- 9 0
		Tuberoses, per dozen blooms	0 3- 0 6
		Tulips, doz. bun.	6 0-12 0
		— special double varieties ...	18 0-24 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, bushel ...	2 6- 6 0	Grapes, Alicante, per lb. ...	2 6- 3 0
— English, per sieve or half bushel ...	1 6- 3 0	— Hambro, lb....	2 9- 4 6
— — per barrel.	8 0-16 0	— Almeria, doz. lb.	8 0-10 0
— Victorian and Tasmanian, p. case	9 0-12 0	Lemons, per case	8 0-11 0
Bananas, per bunch... ...	6 0-10 0	Melons, each ...	1 6- 3 0
— loose, per dozen	1 0- 1 6	Oranges, per case	8 6-22 0
Figs, per dozen...	4 0- 8 0	— Blood, p. box	6 0 —
Grape-Fruit, per case	8 0-12 0	— Jaffa, per box	14 0-16 6
		— Muria, case...	9 0 —
		Peaches, doz., A.	15 0-30 0
		— " B.	12 0-20 0
		Pines, each ...	3 6- 5 0
		Strawberries, A., lb.	1 6- 3 6
		— — B., per lb...	1 0- 1 6

REMARKS.—Trade in general is very quiet, consequent on the period following general holidays. Supplies of Strawberries are more numerous.

POTATOS.

"Dunbars, 100s. to 110s.; various, home-grown, 55s. to 80s. per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

THE prospect of better trade has not been realised. Zonal Pelargoniums sold somewhat more readily this morning. Marguerites have also an increasing demand. Intermediate stocks are seen of good quality, but many plants were left unsold at closing time. Cinerarias also sell slowly. Spiræas are good in quality but lower in prices. Supplies of Azalea indica are almost finished for the season, while those of Cyclamen are practically over. Ericas are of good quality. E. ventricosa magnifica in beautifully flowered plants realise up to 4s. each; E. Spenceriana is very pretty; supplies of E. Cavendishii hold out well. Boronia elatior can now be had in excellently-grown plants. Some good plants of Metrosideros are now obtainable. Hydrangeas are good and plentiful. Show Pelargoniums, now that the zonals are so good and plentiful, do not sell as freely as formerly. Ivy-leaved varieties include Galilee, Mrs. Hawley, Madame Crousse and Souvenir de Chas. Turner. Plants of the newer varieties Baden Powell and Leopold are seen, but for general work the older sorts still hold their own. Saxifraga pyramidalis and Verbena Miss Willmott are both good in quality. For extra fine specimens of Rose Crimson Rambler prices vary from 5s. to 10s. 6d. each. The H.-P.'s are not so good, and many of the variety Madame Levavasseur are of poor quality. Heliotrope does not sell very readily; Rhodanthe clears out well. There is little variation in trade for Palms, Ferns, and other foliage plants. Ferns have a somewhat increased demand, but supplies are very large. Bedding plants are now plentifully arriving. the stalls under the new French Market being well filled.

CUT FLOWERS.

Never was trade more uncertain; there seemed a little revival at the end of last week, but this morning things were very quiet, and large quantities of splendid material were left over at closing-time. Supplies of Roses are considerably in excess of all demands, and splendid blooms remain unsold. Prices for Lilium longiflorum are down to the lowest ebb. Supplies of Daffodils are now getting short, but good "bicolors" are plentiful. Spanish Iris are over-plentiful; the best English-grown flowers make good prices, but Jersey supplies are overdone, and are offered at low prices. Stephanotis flowers are good; Gardenias are very plentiful and low in price. Gladiolus Colvillei "The Bride" and the pink variety are noticed on the stalls, also double and single scarlet Anemones. Lily of the Valley is again more plentiful, and consequently lower in price. Carnations are over-abundant. Sweet Peas are good, but supplies are large. *A. H., Covent Garden, May* 3, 1905.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending April 29, 1905.

1905. April 23 to April 29.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
	At 9 A.M.		Day.	Night.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	50	46	55	42	37	47	47	47	Tot 0·11	4	20

THE WEATHER IN WEST HERTS.

Frequent Showers with High Winds - The day temperatures have been about average and very equable—the highest readings varying only from 51° to 58°. The nights were all warm, and on none of them did the exposed thermometer fall lower than to within 4° of the freezing-point. The ground is rather warmer than it was a week ago, and is now at about a seasonable temperature at 2 feet deep, and about 1° colder than the average at 1 foot deep. Rain fell on five days to the total depth of three-quarters of an inch. The percolation through both gauges, which had almost ceased on April 25, recommenced on the following day, and small amounts have come through every day since then. The sun shone on an average for three hours a day, which is nearly two and a half hours a day short of a seasonable duration at this time of year. The winds have been high, and the direction mostly some point between south and west. On the 1st the mean velocity for the windiest hour amounted to 18 miles, direction south-west. The average amount of moisture in the air at 3 P M. was as much as 8 per cent. in excess of the mean

APRIL.

Frequent Rains and Cloudy Sky.—The day temperatures were as a rule low. Indeed, there at no time occurred more than five warm days in succession, and even then the highest reading was only 61°. On the other hand the nights were mostly warm, and the greatest cold, as shown by the exposed thermometer, was 9° of frost, which is a high extreme minimum for the month. Rain, hail, snow or sleet fell on as many as twenty days the average number for April being thirteen. The falls, although very frequent, were never very heavy, the measurement on the wettest day falling short of half an inch. The aggregate quantity for the month was just over 2 inches, which is slightly in excess of the April average. Of that amount about one-third, or three-quarters of an inch, came through both percolation gauges. This was a very gloomy April, the average daily record of clear sunshine being only 3¼ hours, which is 1¾ hours a day below the mean for the month, and making it the most cloudy April since 1888, or for seventeen years. The winds were, as a rule, light, and in no hour did the mean velocity exceed 18 miles—direction W.N.W. For 174 hours or seven days, the direction of the wind was some point between north and east. The atmosphere was unusually humid, the mean amount of moisture in the air at 3 o'clock in the afternoon being as much as 9 per cent. in excess of the average for April. *E. M., Berkhamsted, May* 2, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 280.]

GARDENING APPOINTMENTS.

MR. C. MUNNINGS, for the past five years General Foreman in the Gardens, Bloxholm Hall, Lincoln, as Gardener to Sir G. WHICHCOTE, Bart., Aswarby Hall, Folkingham, Lincoln.

Mr. W. PARKER, formerly Gardener to LORD ST. LEVAN, St. Michael's Mount, Cornwall, as Gardener to F. HALL, Esq., Park Hall, Mansfield, Notts.

Mr. DAVID ROBERTSON, for nearly three years Foreman in The Gardens, Springkell, Dumfriesshire, as Gardener to the Hon. Mrs. DEAN MORGAN, Ardcandrisk, Wexford, Ireland.

Mr. F. G. BREWER, The Grange Gardens, Brentwood, and previously three years Gardener to R. E. JOHNSTON, Esq., Terling's Park, Harlow, Essex, as Gardener to C. G. BEALE, Esq., Bryntirion, Bontddu, Dolgelly, Merioneth.

Mr. F. TILBURY, for some time Foreman in Mr. JOHN PROCTOR'S Nursery, Portobello, and previously at Lynford Hall, Norfolk, as Gardener to JAMES PARKER, Esq., Clovelly, Kilmacolm, Renfrewshire.

Mr. P. J. LUCKING, previously with the late F. G. LLOYD, Esq., Langley House, Slough, as Gardener and Bailiff at Hopedene, Holmbury, St. Mary, near Dorking.

Mr. CHARLES COUSINS, for ten years General Assistant to Mr. LOCKIE, Diddington Hall Gardens, Huntingdon, as Gardener to G. D. NEWTON, Esq., Croxton Park, St. Neots, Hunts.

Mr. H. MOSSOP as Gardener to R. R. LEMPRIERE, Esq., Rozel Manor, Jersey.

Mr. H. TREEN, for upwards of eight years Gardener to A. H. BENSON, Esq., as Gardener to S. M. ROOSEVELT, Esq., Roosevelt Hall, Lake Skaneateles, New York State, U.S.A. He will sail on May 10.

Mr. W. HOWE, Jun., for the past two and a half years Foreman in the Gardens at Park Hill, Streatham Common, as Gardener to Lord STANLEY, Coworth Park, Sunningdale, Berks.

Mr. JAMES WHITE, for some time Foreman in The Gardens, Thorms House, Wakefield, as Gardener to Colonel TOBIN, Upper Berwick House, Shrewsbury.

Mr. WILLIAM MCNICOL, for the past three years Gardener to Colonel WILSON, Bannockburn House, as Gardener to Captain GRANT, Kilgraston, Perthshire.

CATALOGUES RECEIVED.

WM. PAUL & SONS, Waltham Cross—New Roses, Cannas, Phloxes, &c.

AMOS PERRY, Hardy Plant Farms, Winchmore Hill, London, N.—Water Plants.

CO-OPERATIVE BEES, Ltd., Wapping Buildings, Liverpool—Alpine and Herbaceous Plants, Seeds, &c.

HARRY BARKER, Rosemount, Whittlesford, Cambs.—Hardy Plants.

ANSWERS TO CORRESPONDENTS.

Apple-shoots: *An Old Reader.* There is not sufficient evidence in the shoots themselves from which to determine whether the flowers have been eaten by birds or have fallen after injury from frost. We suspect the latter is the cause, but as you have the trees under your immediate observation, it should be an easy matter to form a correct opinion in such a case. The seeds received are under examination.

Auricula: *A. K.* The Auricula truss is one from an ordinary border variety. The farina in the centre of the flower shows it to be of the Primula Auricula parentage. It is doubtless adapted for border culture, but is of no value whatsoever as an exhibition variety.

Books: *Perplexed. Pictorial Practical Tree and Shrub Culture,* by W. Dallimore, is an excellent and inexpensive book on the subject, price 1*s.* 2*d.* post-free. *Beautiful Flowering Trees and Shrubs,* by John Weathers, price 5*s.* 4*d.* post-free; and *Trees and Shrubs for English Gardens,* by E. T. Cook, price 12*s.* 6*d.* post-free, are more elaborate works on the same subject. The above works can be obtained from our Publishing Department.

Bordeaux Mixture: *G. J. R.* We copy the following recipe from page 126 of the *Calendar of Garden Operations,* issued by our Publishing Department, price 7½*d.* post free. Dissolve in a large wooden or earthenware tub 2 lb. of sulphate of copper (blue vitriol) in two gallons of hot water. Then put 2 lb. of freshly-slaked lime into another tub with two gallons of water so that a creamy fluid is made. Then pour the lime solution into the copper solution and stir well. Add twenty gallons of water and continue to stir. The mixture (which should be of a blue colour) is applied with a syringe or a special form of spraying machine.

"Browning" in Vines: *W. H. S.* This disease is called by the French "Brunissure." We have not heard of its having any other name. The issue of the *Gardeners' Chronicle* for August 19, 1893, can probably be obtained on application to our Publishing Department.

Cabbage Plants: *H. & Son.* You should know better than we what is the matter. We do not see any fungus, but it is possible the slime-fungus is present.

Cucumber Leaves: *Reader.* There is no trace of disease. The leaves have been scorched, and the bleached edges strongly suggest the presence of deleterious fumes, or the use of an insecticide when the foliage is damp.

Foliage of Snowdrop and Daffodil: *J. K. L.* The spots are due in the first instance to insect punctures. Fungi of various kinds afterwards have settled on the wounds. The injury is not serious, and is not likely to appear another season unless the punctures are repeated.

Friar's Balsam: *E. C. C. D.* Populus balsamifera has nothing to do with benzoin. This is obtained from Styrax Benzoin, and possibly from other plants. We do not know that a commercial preparation of any kind is obtained from the Poplar, which, however, is very fragrant.

Gardeners' Notice: *A. E. W.* In the circumstances you describe you cannot be legally dismissed at the end of the first week. We cannot undertake to reply to questions through the post.

Lantern Slides: *Enquirer.* Apply to Mr. W. G. Smith, 121, High Street, South Dunstable, or to Mr. J. Gregory, 60, Canterbury Rd., Croydon.

Laurels: *J. H.* The yellow appearance will probably disappear as growth goes on.

Leea amabilis: *J. B. W.* This handsome-leaved species requires to be cultivated in a stove temperature, and if planted out is capable of producing a good effect trained to the pillars of the house. The plant is very ornamental also when grown as dwarf specimens in small pots. You may propagate the species from cuttings inserted in a porous compost over bottom-heat.

Nectarine Leaves: *J. C.* Your leaves are affected with the Silver-leaf disease, supposed to be due to a fungus, Stereum. Cut the affected shoots away and burn them. Turn out as much of the soil as you can, and replace with fresh loam.

Names of Plants: *M. B. F.* Antirrhinum Asarina.—*C. W. P.* Sparmannia africana.—*A. B. H.* 1 and 2, both forms of Iris pumila; 3, Anemone nemorosa var. Robinsoniana; 4, apparently Arabis lucida, specimen small and inconclusive.—*H. R. W.* Gnaphalium lanatum.—*C. S.* 1, Miltonia flavescens; 2, Maxillaria porphyrostele. — *E. L.* Brassia verrucosa.—*C. L.* Cœlogyne nitida and variety alba.—*B. R. J.* Magnolia conspicua.—*F. W. C. S.* Saxifraga granulata. —*Landscape.* 1, Cryptomeria japonica; 2, Sequoia sempervirens; 3, Tsuga canadensis; 4, variety of Thuya orientalis; 5, Abies nobilis; 6, Libocedrus decurrens.—*J. S.* 1, Viburnum plicatum; 2, V. tomentosum; 3, Forsythia suspensa; 4, Prunus pseudo-Cerasus, semi-double variety; 5, next week; 6, Polygonum cuspidatum.—*Brook, L.* 1, Pyrus aria variety; 2, a Poplar, probably the Weeping Aspen, P. tremula.—*G. D.* Fritillaria obliqua, Thuya dolabrata, Eupatorium, perhaps Weinmannianum, Cytisus austriacus. The specimens were in such a miserable condition that we are unable to name them more fully.—*C. J. P.* Cytisus austriacus.

Peach-leaves: *L. F.* See answer given below to "Perplexed." Cut back the shoots to a point below the diseased leaves, and spray with potassium sulphide next spring.

Photograph: *J. C.* We believe the plant is Eucomis punctata. If so, it is not uncommon.

Plants for Vineries: *M. M. P.* In answer to your question respecting the best plants for furnishing a supply of cut flowers, and to be grown against the back wall of a vinery, we should advise Pelargoniums, both the Ivy-leaved and the zonal types. These would furnish a supply of flowers early in the season and before the Vines had completely shaded the interior of the house. The various species of Asparagus used for decorative effect would succeed in this position, but any plants that are grown under such conditions will become more or less weak in growth, as soon as the foliage of the Vines has excluded direct rays of light from reaching them. In any case, be careful that you do not select for planting in a vinery any species of plants that are known to be specially liable to attacks from mealy bug, thrip, or other insect pests. The introduction of flowering plants into a vinery is frequently productive of disappointment and loss rather than of pleasure and profit.

Plum-tree: *F. G.* The shoot is very badly infested with the "Silver-leaf" disease, common to stone fruits, and it would be advisable to burn the tree at once.

Raspberry Grub: *S. F. P.* The buds are attacked by the grub of the Raspberry-moth (Lampronia rubiella, fig. 118). The caterpillars pass the winter in the earth. The eggs are hatched in the flower, the caterpillars making their way out by a hole at the base. Cart-grease smeared round the base of the canes, or kerosene emulsion washed round the stems, might be tried. In any case all affected canes should be burnt. For a fuller account, see Westwood in *Gardeners' Chronicle* for 1853, p. 757.

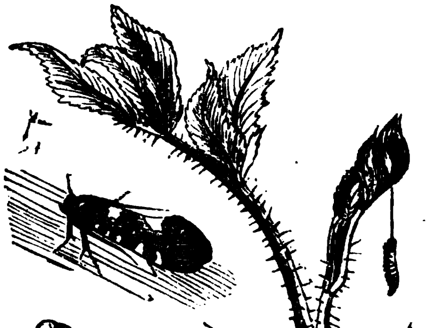


Fig. 118.—Lampronia rubiella: Raspberry Moth.

Scum on Water: *F. W. F.* Your weed is one of the Confervoid Algæ. For means of eradicating it from your water, see answer to "M. M. P."

Tomatos: *E. J. W.* There is no disease present. The spotting is caused by a chill and will not affect future growth. Probably one part of the house is more exposed to draughts than the other.

Tulips: *J. S.* We do not see any fungus, and attribute the appearances to hail or violent rain-storms.—*D. R. M.* The plants are attacked by a fungus, Sclerotinia parasitica, and should be burned at once.

Untidiness and Disaster at the late Auricula Show: *J. C.* You should address your complaint to headquarters.

Vine and Peach Leaves: *Perplexed.* The blotches on the Vine-leaves have been caused by drip from the roof, and then sunlight acting on the wet surface of the leaf scalding has resulted. The Peach-leaves are attacked by a fungus causing "leaf-curl" (Exoascus deformans). The most certain cure is to cut back all affected shoots to just behind the diseased leaves. Spray the trees with potassium sulphide next spring just when the leaf-buds are beginning to expand.

Vine Buds: *W. J. Kendall.* Two species of mites were present in the Vine-buds: (1) an active species belonging to the family of cheese-mites (Tyroglyphidæ), but is probably predaceous, and harmless to the Vines; (2) the Vine-bud mite, Eriophyes (Phytoptus) vitis; this is undoubtedly the species which is causing the injury to the Vines. It is a very destructive species on the continent of Europe, but is fortunately very rare in this country. It is closely related to the Currant-bud mite, and like the latter is very difficult to deal with when once established. You cannot do better than cut away all the infected buds and burn them; but even this method may not materially check the pest. Various washes have been recommended, both at home and abroad, as a remedy against the Currant-bud mite; but the careful experiments conducted at Woburn have abundantly proved that both dipping and spraying with various compounds have proved absolutely useless.

Vine Leaf: *J. S.* The small spots have been caused by minute drops of water falling on the leaf at a time when the temperature is falling. These spots becoming chilled the green colour of the leaf is destroyed and changed into a brown gummy substance. Effective ventilation, especially early in the morning, will check the disease.

Violets: *E. W. D.* Our rule as to varieties of florists' flowers applies to Violets, which we cannot undertake to name. Send them to some nurseryman who cultivates these plants in large numbers, and he will compare them with growing specimens.

Weeds on Ornamental Water: *M. M. P.* The method adopted with success by the Michigan Agricultural College in destroying noxious weeds in lakes and ponds was as follows:—By means of a spraying-machine, a mixture of copper sulphate 4 lb., unslaked lime 4 lb., water 60 gallons, was applied over the surface of the water. Although the entomologist at that college reported that no harm resulted to fishes and frogs by these sprayings, it would be advisable to keep stock and waterfowl for a reasonable period from water thus treated.

White Primrose: *Halstead.* This is not uncommon.

Communications Received.—H. Freen (kindly do so)—W. W.—R. S.—S. W. F.—A. S.—W. B.—R. V. & Son—Olga Fedtschenko, St. Petersburg—H. R.—W. W. & Co.—T. & Co., Truro—E. M.—G. T. B.—F. G. T.—W. J. B.—Sec. Royal Society—D. I.—J. H., Rochester, N.Y.—E. A. B.—J. B.—J. H. A.—E. G. C.—Anxious—W. B. H. & Sons—J. E. G.—Subscriber, Milan—W. T.—J. S.—F. W. F.—E. C., Auckland (letter has been forwarded)—H. C. H., Mayaguez, Porto Rico—W. H.—G. W.—F. M.—N. E. B.—W. W.—K., Enfield—E. M.—Miss C.—C. R.—W. W.—F. J.—W. G. S.—F. L.—W. S.—R. M.—F. J.—H. W. W.—Foreman—R. D.—W. P. R.

THE
Gardeners' Chronicle

No. 959.—*SATURDAY, May* 13, 1905.

CONTENTS.

Books, notices of—
  Botanical Magazine ... 296
  Manual of Swiss Horticulture 291
  Publications received 299
Calodendron capense 293
Chelsea Physic Garden 289, 296
Cucumber "spot" disease 298
Cultivation, experimental 289
Currant-bud mite, the 298
Foreign correspondence—
  The Grape fruit ... 294
Fuchsia seedlings ... 298
Gale, effects of the late, in South Devon ... 298
Garden insects, conference of biologists on 298
Garden-seat, how to make a Bamboo ... 293
Gooseberry disease, Æcidium grossulariæ 304
Kew Guild dinner ... 296
Meconopsis integrifolia 291
Obituary—
  Featherstones, Robt. 299
  Moore, Charles ... 299
  Smith, Thomas ... 299
Orchid notes and gleanings 290
Rust diseases transmitted in the seed ... 296
Societies—
  Horticultural Club 303
  Royal Horticultural 300
  United Horticultural Benefit and Provident 303
Week's work, the—
  Flower garden, the 295
  Fruits under glass... 294
  Hardy fruit garden 294
  Kitchen garden, the 295
  Orchid houses, the 295
  Plants under glass... 294

ILLUSTRATIONS.

Calodendron capense flowering in the Botanical Gardens at Sydney (Supplementary Illustration).
Calodendron capense, inflorescence of 292
Garden-seat, details showing how to construct a Bamboo 293
Lissochilus purpuratus 290
Meconopsis integrifolia, showing variations in the capsule 291
Moore, Charles, portrait of the late 299
Peach-leaf affected with "blister," Exoascus deformans 294

THE CHELSEA PHYSIC GARDEN.

THERE are some among us still who have an affection for the old Physic Garden at Chelsea, which is associated with so many personal reminiscences, and hallowed by so much that is of enduring botanical and historical interest. In the struggle for existence it seemed more than once as if the garden must succumb. Its natural protectors found its maintenance beyond their powers. The associations with Sloane, Philip Miller, Lindley, N. B. Ward, Fortune, Thomas Moore, and many others who laboured within its walls went for nothing. The Royal Society, which was asked to come to the rescue, politely declined to assist the Society of Apothecaries in carrying on the establishment. The College of Physicians was equally unsympathetic. The Society which had done so much for medical botany in the past ultimately applied for permission to relinquish their trust. The Treasury was applied to in order that the students of the Royal College of Science might obtain the privileges which had hitherto been enjoyed by the medical students of the London hospitals. Enquiry was made, and eventually a scheme was elaborated for providing an income for the garden and for re-establishing it as a botanic garden. By this scheme the Trustees of the London parochial charities were invested with the care of the garden and the management of its funds (less than £1,000 a year), of which the Government supplies the magnificent sum of £150! A Committee was appointed, consisting of seventeen persons, the Society of Apothecaries having, alternately with the College of Physicians, the right to nominate a member, so that the connection with the original holders is still in some slight measure preserved. The Committee seems an unwieldy one, comprising many members not generally known as in any way connected with botanical or horticultural science. Among them, however, are others, such as Sir Herbert Maxwell, Dr. Scott, Sir M. E. Grant Duff, and Professor Farmer, who can appreciate and direct the work of the garden. As scientific adviser the Committee is fortunate is possessing such a man as Professor Farmer.

The first Annual Report of the Committee of Management, dated January, 1905, is now before us, and from it we learn what has been done up to this time.

So far as the proper work of the garden is concerned, we have already had opportunities of commenting upon that. We now learn that on the new buildings which were necessitated a sum of £6,000 has been expended, of which £4,050 was advanced by the Trustees, to be repaid in thirty years out of the income of the garden, so that the financial prospects of the garden can hardly be said to be very brilliant. The laboratory and lecture-room have been found to be admirably suited to the purposes for which they were intended. These purposes, stated briefly, are (1) to render assistance in the teaching of botany; (2) to provide material and opportunity for botanical investigation.

Courses of lectures in advanced botany have been or will be given by Sir W. Thiselton-Dyer, Dr. Scott, Professor Reynolds Green, Professor Farmer, Professor Oliver, Dr. Rendle, Mr. A. D. Hall, Mr. V. H. Blackman, and Mr. A. G. Tansley. The average attendance on Professor Green's lectures on "Vegetable Physiology" was about seventy.

The laboratory is chiefly used by the students of the Royal College of Science and one of the smaller laboratories has been placed at the disposal of Mr. Francis Darwin for his experimental researches. Mr. Darwin has also removed the scientific library belonging to his father, the late Charles Darwin, to the lecture-room in the new building. This library is available for the use of students under proper regulations. The connection with the name and work of Darwin will add greatly to the prestige of the establishment. Sir William Ramsay is also mentioned in the Report as engaged in making certain experiments in connection with the nutritive value of certain classes of manures.

The garden is not intended as a recreation-ground, but for the use of students and their teachers, and for the supply of specimens to various educational bodies in London.

The old Lebanon Cedar, the last of the four which were the earliest planted in this country, had to be removed. It had been dead for some years, and though its removal was objected to on sentimental grounds, it was really a matter of necessity.

The Committee regret to report the resignation from various causes of several of the original members, including Lord Redesdale and Professor Vines. Professor Farmer's services are appropriately acknowledged, and the Report concludes with the following commendation of the work of the Curator:—

"The Committee desire to express their highest approbation of the work performed by the Curator, Mr. Hales. The wonderful improvement in the state of the garden . . . is patent to all who have known it in recent years. The Committee recognise that the time, attention and constant care bestowed on the garden by Mr. Hales have been a labour of love, and they are glad to have this opportunity of formally congratulating him on the success of his work."

This is high praise, but we know that it is well merited. Long may the old garden flourish!

EXPERIMENTAL CULTIVATION.

(*Concluded from p.* 132.)

POT-CULTURE EXPERIMENTS.—Criticism of pot-culture experiments as occasionally conducted on the Continent and elsewhere has at times been justifiable, chiefly from defects in the methods and from general conclusions being founded upon very limited evidence. Faulty work of this kind is of little consequence so long as it is simply indulged in as a form of amusement, but when it is claimed as scientific and the results are given to the world, the matter assumes a different aspect, and it is not surprising if such experiments are attacked by critics.

Well-organised systems of pot-culture, on the other hand, are capable of rendering substantial service in several directions. As an introduction to more extended work, as a means of reducing time, labour, and expense in preliminary investigations, also for dealing with bye-questions or problems arising out of larger experiments, pot-culture should constitute an important aid to the student.

The best example in this country of well-designed work in the direction indicated may be seen in the Pot-culture Station at the Royal Agricultural Society's Woburn Experimental Farm. It was founded under the Hill's Bequest to investigate the effects of certain soil substances which occur in very small quantities, but much other useful work is included in its scope. Dr. J. A. Voelcker is the Director, and under his experienced supervision it is developing into a most interesting department of the Society's work. Photographs are taken of the plants in all stages, analyses are also prepared of soils and crops, and much valuable information is accumulating, a portion of which has already been published as reports in the Society's *Journal*. The Director has the assistance of a fully qualified chemist of long practical experience in Mr. H. M. Freear, and the utmost care is bestowed upon the whole of the work. Any institution or private investigator desiring to commence such experiments would do well to take this establishment as a model. Permission to inspect it can be readily obtained on application to the Director.

Under the best of systems there is much that is unavoidably artificial in pot-culture, and results may be unduly influenced in several ways. Soil temperature, moisture, aëration, and root area are all difficult to assimilate to the conditions prevailing when plants are grown in the open soil. The kind of pot employed influences the first to a great extent, and many forms have been tried with varying results. Zinc pots have been most largely used, but are objectionable for several reasons, the chief being the effects produced by quick heating and cooling, which are difficult to guard against, even when a double-cased form is used. These are now being generally discarded in favour of glazed earthenware pots, which are not subject to such sudden changes of temperature, but they are heavy, and require much care to avoid breakages.

The regulation of the soil moisture necessitates the same attention in each case, the amount of water supplied must be noted, and if the drainings have to be examined for the determination of their constituents, a tap is provided for the purpose at the base of the pot. In some cases where the experiment is of short duration, nothing is removed until the completion of the work, or at the end of each season; but this is open to serious objections if there is much accumulation of water beneath the roots.

Aëration is still more difficult to control in a manner approximate to natural conditions. It is usually attempted by means of a false bottom to the pot, to which air is admitted either by a pipe rising to the top and remaining constantly open, or by an aperture near the base covered with metallic or other netting to exclude insects, &c. Both systems are necessarily artificial, and if not controlled with great care they may result either in excessive or in insufficient aëration, which will affect the behaviour of the plants to some extent.

The root area affords another difficulty when dealing with many farm and garden plants, the roots of which extend far into the soil. A pot 18 inches deep and 14 or 15 inches in diameter is a large size, and filled with soil it becomes a heavy object to move about; yet this does not provide adequate space for the free rooting of most field crops. In the majority of cases, therefore, root restriction is induced, which again influences the behaviour of the plants.

In regard to all these defects it must be said that if kept uniform, all the plants being subjected to exactly the same conditions, and a sufficient number being employed, they will be all fairly comparable amongst themselves, though the actual growth may not correspond to that of plants under natural conditions. This will not prevent useful work being accomplished with due judgment; the danger is when total crops, &c., are calculated from the results by the acre, and compared with field crops. The differences between the various experiments may be shown in that way for the sake of illustration, but even that is open to objection, and perhaps the best form of displaying the results is as percentages of a normal crop experiment.

One difficulty in such experiments is to have in each pot as nearly as possible an equal amount of soil in an equal degree of consolidation. To aid in this the soil must be thoroughly mixed before it is used, and it should be in an even state as regards moisture; if wet it will settle into too hard a mass, and if dry it will not be easy to moisten it adequately afterwards. If the soil is weighed out in amounts of 50 or 60 lb., it will be found a difficult matter to fill that in to an equal level in a number of pots, and if several persons are entrusted with the work there will be a marked difference. A few pounds should be placed in at a time, and lightly "firmed" with a wooden rammer; but too much care cannot be exercised in this operation, and some experience is also needed to regulate the process of consolidation satisfactorily.

Records must be kept of the weight of pots, soil and plants. Measurements will also be advisable in some cases, and every detail in the growth of the plants should be noted. The weather conditions must be observed, and injurious or beneficial influences duly valued. The amount of foliage, development of individual leaves, the time of flowering, the maturation of seed, fruit, root, or the whole plants, are all points which demand attention and recording. In manurial experiments it may be essential to prepare a series of exact analyses, so that altogether a great amount of work is involved.

Protection of the plants from birds is necessary in many instances, and at Woburn this is accomplished by means of an arched iron structure covered with wire netting, but anything of this kind could be easily made without much expense.

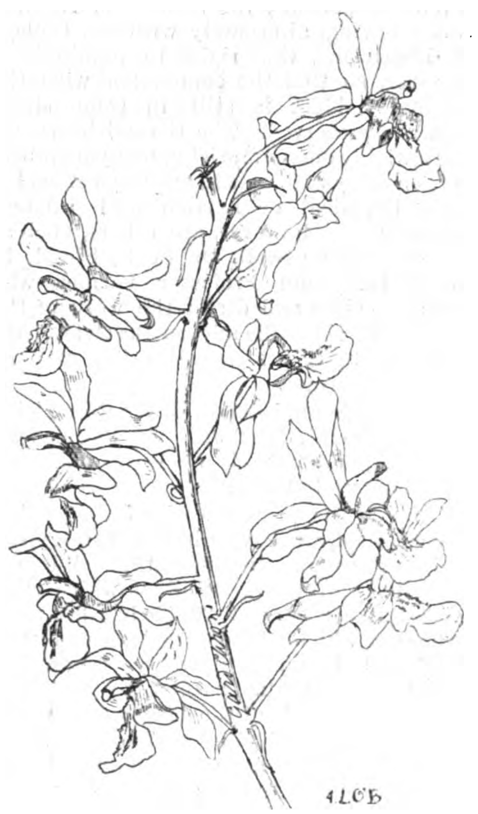


FIG. 119.—LISSOCHILUS PURPURATUS.

For convenience also in moving the pots about these are in the institution named placed upon low wheeled trolleys running upon rails, so that the pots can be taken under the cover of a glass roof when requisite.

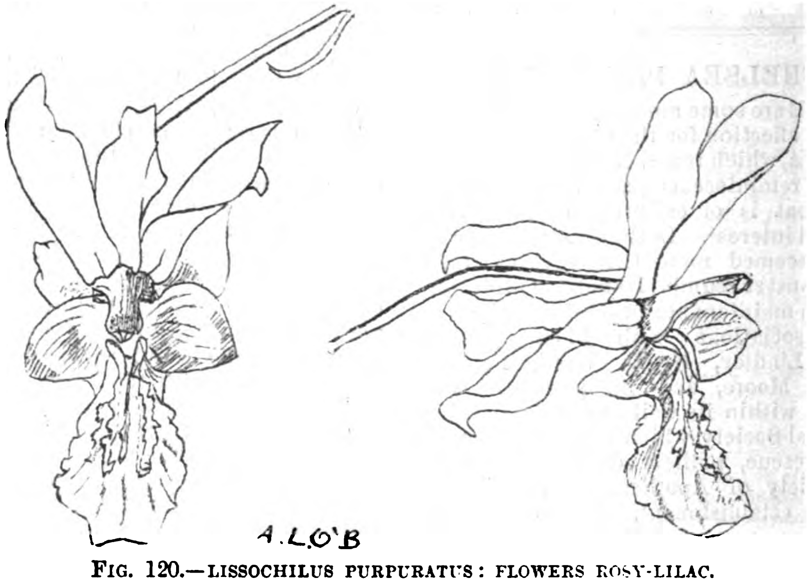


FIG. 120.—LISSOCHILUS PURPURATUS: FLOWERS ROSY-LILAC.
(*Natural size.*)

The pot-culture experiments specially referred to in these remarks are those devoted to field crops, garden vegetables, or fruit-trees, but it is obvious that many others can be undertaken on a smaller scale, for which an ordinary greenhouse would suffice. The general principles of management, recording, &c., are equally applicable, and can be modified to meet particular requirements. A complete record should be had at starting of plants and soil; everything supplied must be noted; and at the conclusion a full record must be taken of the results.

Much more could be written upon the important subject of experimental cultivation, for it is practically inexhaustible. For example, experiments in plant improvement, in the application of insecticides and fungicides, and in the best commercial sources of the essential elements, all come within its scope. Enough has, however, been said to show how much interest there is in work of this character, and to indicate to untrained beginners the methods upon which it should be founded. In the future horticulturists will probably be called upon to do much more in this direction than hitherto, and every gardener who desires to stand high in his calling should, if required, be at least prepared to carry out work of the kind upon a sound scientific basis. *R. Lewis Castle.*

ORCHID NOTES AND GLEANINGS.

LISSOCHILUS PURPURATUS, *Lindl.*

AN inflorescence of this fine species is sent us by Mr. A. J. Reid from The Gardens, The Chase, Farnham Royal, Bucks, with the information that the tubers were received from Central Africa, and that the leaves are long and narrow. The inflorescence, over 3 feet in length, bore on the upper part a number of very attractive flowers. The sepals and broader petals are of pale rosy-lilac colour. The side lobes of the labellum are greenish with some indistinct purple markings, and the expanded front lobe, down which extends some irregular raised lines, bright rose-purple colour.

The Lissochilus and allied Eulophias of this class are widely distributed in Africa, and are among the showiest of terrestrial Orchids, but owing to the fact that their requirements are not yet understood in gardens, it is only occasionally that they are seen in flower. The probability is that they are grown in an atmosphere that is too close and moist, for a correspondent writing from the Transvaal recently, after remarking on the beauties of the yellow Lissochilus speciosus and some other white, rose-coloured, and purple species, stated:—"The conditions under which these beautiful and hardy Lissochili grow are as follows: In the open veldt among grass; soil a sandy loam, light or dark. They commence to grow about the end of July, and flower throughout September and October. There is no rain from end of April till August at the earliest. Thermometer in summer at a maximum of 90°; in winter, at the end of May and June, down to 16°. Altitude 5,000 to 6,000 feet. Their bulbs are only about 1 inch below the surface, and the ground is hard and dry during winter. There is no shelter of any kind for them." This applies to the Transvaal species, and it suggests that they would be nearly, if not quite, hardy in this country if they could be got to work into our seasons, which are the reverse of those in their native habitats. The treatment for Lissochilus purpuratus and others of the more tropical African species of the class which form chains of underground tubers might also be regulated in some degree in the light of the notes given.

MECONOPSIS INTEGRIFOLIA.

IN the *Gardeners' Chronicle* for April 1 last, a paragraph appears in which a doubt is expressed as to whether the plant figured under the above name in the *Flora and Sylva*, Part 24 (March, 1905), from a plant flowered by Messrs. "Bee & Co.," of Neston, is of the same species as Messrs. Veitch's plant illustrated in the *Gardeners' Chronicle* for October 1, 1904.

In the figure of Messrs. Bee's plant cited above, the two immature capsules are drawn with styles respectively $\frac{3}{8}$ and $\frac{1}{2}$ inch long. Appended is Franchet's original description of Meconopsis integrifolia,[*] from which it will be seen that this plant has a very short thick style with broad, radiating stigmas. Indeed, so short is the style that the stigma may almost be described as sessile.

An inspection of some fifty-odd specimens from my herbarium, and of the plants exhibited by Messrs. Veitch at the Horticultural Hall on April 25 last, failed to reveal a single example showing any tendency towards the production of an elongated style.

In the description of Messrs. Bee's plant, which appeared in the *Gardeners' Chronicle* for September 17, 1904, the following statement was made:—"The flowers, each borne on a stout peduncle 12 to 14 inches in length, are of a delicate soft yellow colour, *and rise in succession from the thick tuft of leaves*, different from other Eastern members of the genus, so that it is expected to prove a perennial plant."

From the part of the above statement which is italicised, it is to be inferred that the writer means the plant is scapigerous. Franchet[*] describes Meconopsis integrifolia as caulescent. In the *Gardeners' Chronicle* for October 1, p. 241, the above important difference was noted, and the suggestion made that it was "probably because English-raised plants are weak." Neither in the Kew Herbarium nor amongst my specimens and the living plants raised from seed sent home by him is there a single example in which the flowers are other than cauline. Further, I never met with a scapigerous example of Meconopsis integrifolia in my travels.

In having a definite cymosely sub-umbellate inflorescence, Meconopsis integrifolia differs from all other species of the genus save M. grandis, Prain. In having a very short, thick style and broad, radiating, almost sessile stigmas, M. integrifolia differs from all others of the genus save the scapigerous M. punicea of Maximowicz.

With these facts before us, it is evident that, if the description and figure of Messrs. Bee's plant are correct—and there is no reason to doubt this—their plant varies from the typical M. integrifolia. Messrs. Veitch's plants are identical with the type specimen as described by Franchet, and figured by Maximowicz in his *Flora Tangutica*.

The statement that Meconopsis integrifolia will not seed in England is entirely premature.

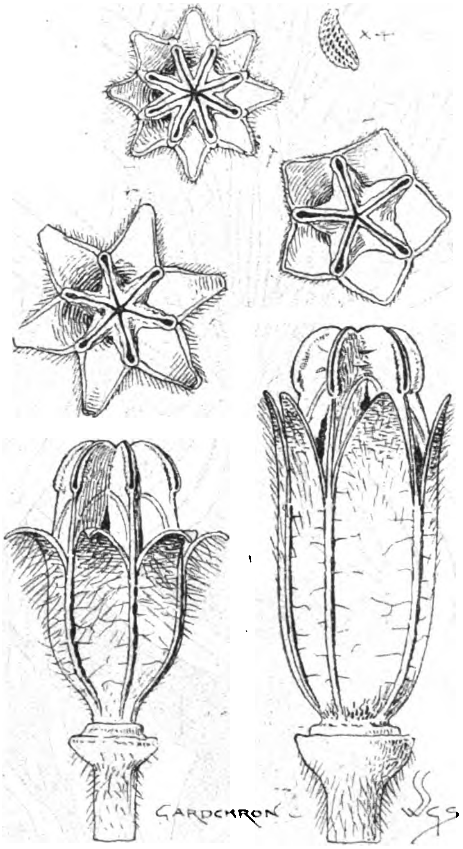


FIG. 121.—MECONOPSIS INTEGRIFOLIA, SHOWING VARIATION IN LENGTH OF CAPSULES, STIGMAS AS SEEN FROM ABOVE, AND SEED.

Many scores of strong plants are now blooming in Messrs. Veitch's Langley nursery, and are as vigorous as in their native home. The root system as observed at Langley is shallow and fibrous. Some of the dried specimens show indications of a tap-root, so that the form of the root is probably dependent on the nature of the soil.

Maximowicz founded the species on a plant collected in Kaneru (N.W. China) by Przewalski in 1873, but he considered it a Cathcartia. Subsequently Franchet secured ripe capsules, and found it to be a Meconopsis. In his *Flora Tangutica*, Maximowicz gives excellent figures under the name of Cathcartia integrifolia. His T. 9, fig. 7, shows the caulescent habit; his T. 23, figs. 22—25, shows the broad radiating nearly sessile stigmas. Franchet considers M. integrifolia near to M. simplicifolia, Hooker and Thomson, but it is certainly more closely allied to M. grandis, of Prain. This last is a Sikkim species, and differs in having smaller purple flowers, and slightly different style and stigma, and toothed leaves. *E. H. W.*

BOOK NOTICE.

LEHRBUCH DES GARTENBAUES MIT BESONDERER BERUCKSTICHTIGUNG SCHWEIZERICHER VERHÄLTNISSE. Von Max Löbner, Mit 45, Abbildungen. Verlag von Cäsar Schmidt, Zurich.

THIS manual of Swiss horticulture has been written with the idea of affording the possessor of a garden employing a gardener an insight into garden matters so far as to enable him to form a just opinion of the labours and activities of the latter. In order to serve this purpose, the subject-matter is greatly condensed, and in order to obtain wide-spread acceptance of the book among amateurs and gardeners the price is very small. The æsthetic side of gardening receives pretty full attention, as in this matter the greatest mistakes are made by those who lay-out gardens.

The illustrations in this part of the book are well chosen and exceedingly pretty and interesting. The so-called "English style" of laying-out introduced from England by Sckell, an example by him, the *Englischer Garten* at Munich being cited as one of his successes; and another, the Park at Nymphenburg, laid out originally in the French, is now being altered to the English style. Prince Pückler-Muskau did much to further the adoption of the English style at Muskau, and his work, entitled *Änderungen der Landschaftsgärtnerei*, no longer in print, but of which a cheap edition will shortly appear, helped to bring it into favour on the Continent, and more particularly in Germany and Central Europe. Since the middle of the last century a natural style, suited to the manners, customs, and views of the various nations, localities, and soil formations, has arisen, with the right to be entitled the German (Deutscher) style. Where formerly only princes and the upper ten thousand had the enjoyment of a park or garden, the people now have their house-gardens laid out according to true landscape rules.

For small gardens and parks, the author favours, and with right, the older, regular style, French by preference, rather than the more free, natural or English style. He treats of summer-houses, arbours, arcades, pergolas, garden seats, and other adjuncts to a garden, giving some capital illustrations; affords rules for the construction of roads, paths, and drains in a correct manner. The treatment of plantations, groups, and shrubberies comes next under consideration, the species of trees that succeed in Alpine woods, in the lower hills, and in the plains being named; and allusion made to the liability of the young shoots of the Silver Fir to be injured by late spring frosts, when planted in low grounds, thereby crippling and spoiling its beauty. The advice is given the planter to note carefully the indigenous timber trees of the district, and to plant chiefly those, so as to obtain in the artificial landscape the bold and majestic appearance of a natural wood, or, as Goethe wrote, "Im Grossen gros."

Thinly scattered among these, Tilia, Platanus, Acer, Salix, and Betula, should be planted, and in the larger plantations Fagus, Ulmus and Quercus arranged in small groups or singly, and in swampy ground Alnus in variety.

The bad practice of most villa gardeners in cutting up the lawn into small divisions by the formation of numerous flower-beds is justly condemned, and an illustration of such a spoiled lawn is given from a photograph.

The chapter on the treatment of shrubs from time of planting and subsequently, contains much useful information. In regard to evergreens the author states that it is not the cold which injures or kills, but the varying temperatures in the months of January and February, from warmth by day to great cold by night; and it is always advisable to plant in half shade, thus

---

[*] *Meconopsis integrifolia*, Franchet, Bull. Soc. Bot. France, xxxiii. (1886), 389.—"Souche épaisse, couverte au collet des débris des anciennes feuilles; plante toute hérissée de longs poils roux, très abondants surtout sur les pédoncules; feuilles basilaires tripli-nervées étroitement lancéolées ou lancéolées-linéaires, longuement atténuées à la base en un pétiole ailé, souvent plus long que le limbe, brièvement atténuées, un peu aigües au sommet, très entières sur les bords: tiges de 2—4 décimètres, portant 3—5 feuilles semblables aux basilaires, les supérieures contigües aux fleurs: deux ou trois fleurs en grappe, ordinairement longuement pédonculées, très grandes (7—10 cent. diam.) d'un jaune soufre; pétales largement obovales, arrondis au sommet; filets staminaux glabres, peu dilatées vers le haut; anthères ovales; ovaire oblong, couvert des soies apprimées jaunâtres; style convexe-pyramidal très brièvement rétréci à la base, avec 5 stigmates radiés-décurrents; capsule obovate-oblongue, longue de 3 à 4 centimètres, s'ouvrant au sommet par 5 valves courtes."

"La plante ressemble singulièrement au M. simplicifolia, Hook. et Thoms.: mais les tiges sont constamment pluriflores, et la portion rétréci constituant le style est très raccourcie."

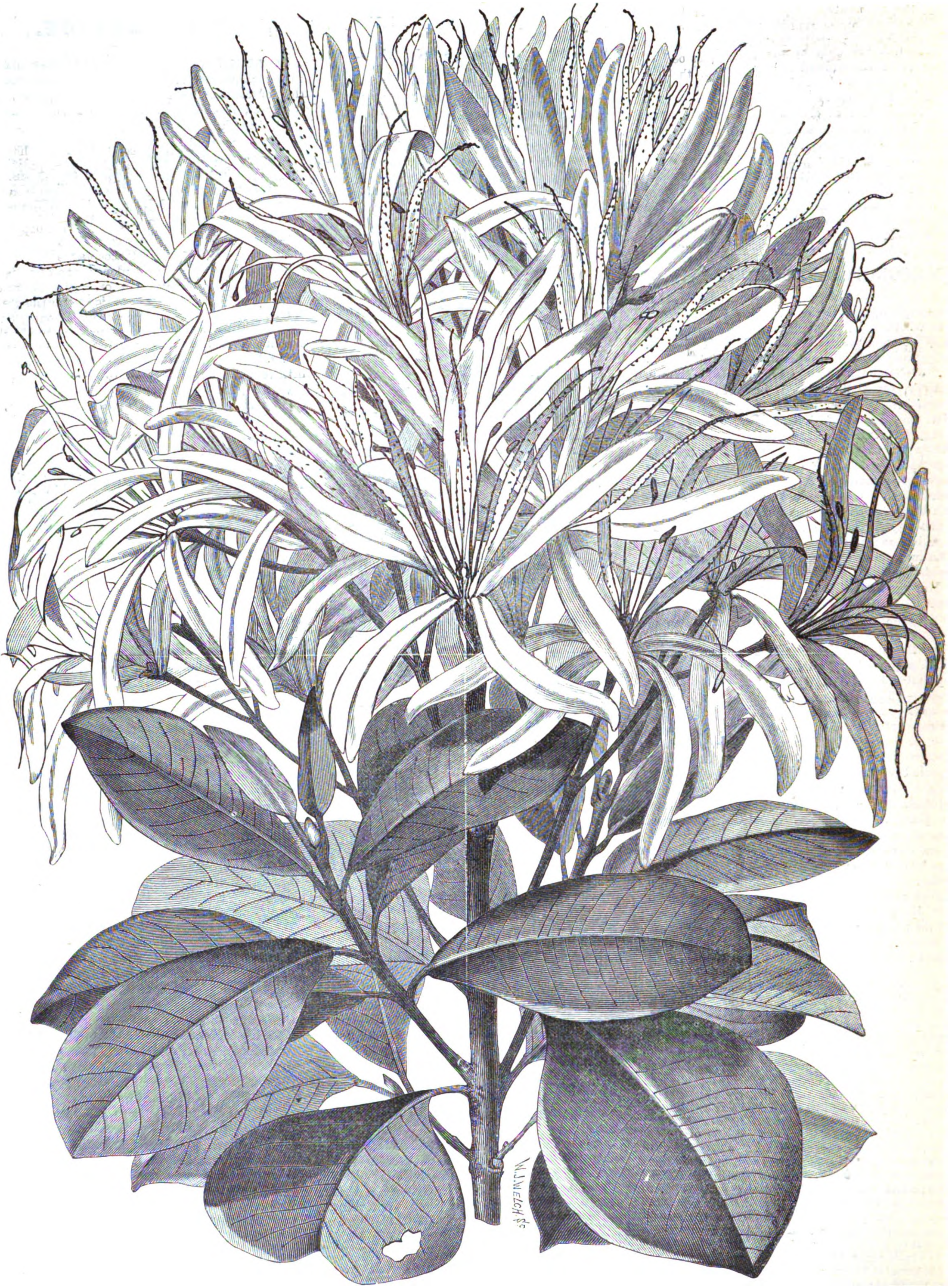
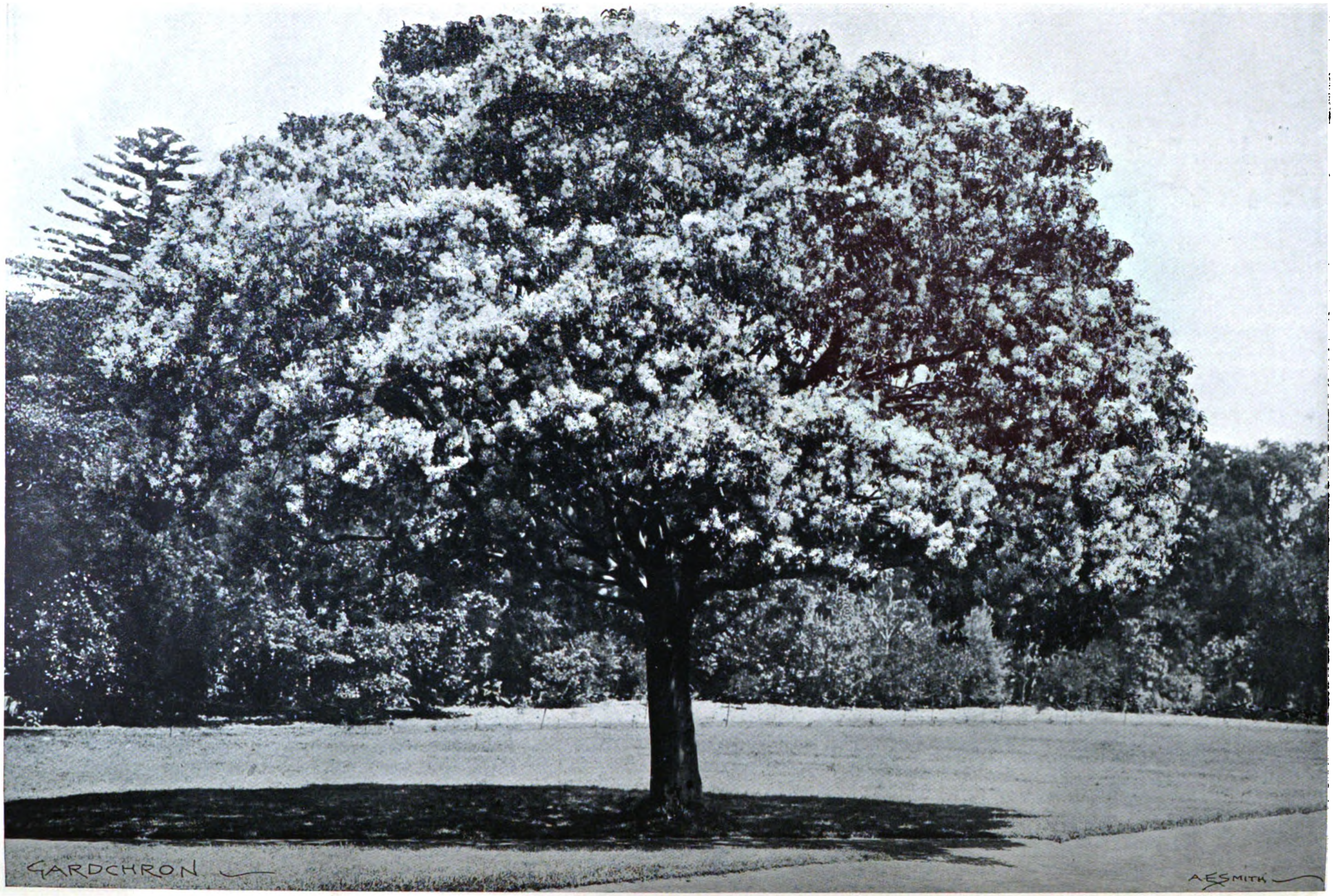


FIG. 122.—CALODENDRON CAPENSE: FLOWERS CREAMY-WHITE SPRINKLED WITH PURPLISH GLANDS.
(See p. 293; also Supplementary Illustration.)



CALODENDRON CAPENSE (CAPE CHESTNUT) IN FLOWER IN THE BOTANIC GARDENS, SYDNEY, NEW SOUTH WALES.

obviating the evaporation of moisture from the leaves, which cannot be replaced by the roots owing to the frozen condition of the soil.

We learn that Roses in dryish land must be protected in winter by burying them in the earth, and in wet land by a covering of tree-leaves laid on the bent-down plants, which are merely pegged down to the soil. In April the Roses are uncovered, but kept lightly bedecked with litter till all danger from frost is passed.

Lawns and rockeries come next in review, and special instructions are given concerning the proper treatment of Alpines, which, in regard to species from the glaciers and higher Alps, seem to be as difficult of management at low altitudes as in our own country. The flower garden, the water-garden and the vegetable garden are given brief notice; as also the fruit garden and orchard, with directions for pruning, manuring, the destruction of insects infesting fruit-trees, &c. We note an illustration of a Grape-vine, carrying numerous bunches of Grapes, accommodated in a rough kind of hotbed frame. *F. M.*

CALODENDRON CAPENSE.

[*See Fig. 122, and Supplementary Illustration.*]

Our Supplementary Illustration to this issue has been prepared from a photograph kindly sent us by Mr. Maiden, Director of the Botanic Gardens, Sydney. In an accompanying letter Mr. Maiden included the following remarks respecting the effect the tree has in the Sydney Gardens. It is quite possible that the tree may have been planted by our old correspondent, Mr. Charles Moore, whose recent death we regret to have to announce (see p. 298):—

> "Every December the Cape Chestnut (Calodendron capense) is a beautiful picture, with its exuberance of brightly-coloured flowers. This summer, however, it has been especially gorgeous. You will observe what a large tree it is, but on no portion of its circumference could a man's hand be placed without covering some of the blossoms. They make a very pretty table decoration."

The species has been known for very many years in English greenhouses, but having been lost sight of for a time, was re-introduced by Mr. Bull in 1882. It is Rutaceous tree or shrub, and is a native of Natal and South-Eastern Africa. The leaves are studded with oil-cysts, which look like translucent spots when held up to the light. The species was described in the *Flora Capensis*, vol. i., p. 371. At fig. 122 the inflorescence is reproduced about natural size, and a good idea can be obtained therefrom of the individual flowers, which are of creamy-white colour with purple glands. In this country the species requires to be afforded the protection of a greenhouse.

HOW TO MAKE A GARDEN-SEAT IN BAMBOO.

The garden-seat in Bamboo illustrated at fig. 123 will be found worthy of the attention of those who are fond of making articles to help furnish the garden. The work is simple, few tools are required, and the material is inexpensive. It is, however, essential that good, sound joints be made. By carefully following the instructions given below the skill will be acquired with very little practice. Those who have not attemped Bamboo-work before are advised to practise first on a spare piece of Bamboo to properly acquire the art of jointing; it is more economical than starting directly on to a piece of furniture and running the chance of spoiling parts of it in gaining experience.

The design given in fig. 123,^{1} is purposely plain, and of such stability as to stand rough usage. The tools required are chiefly a fine-toothed saw, a brace and two bits, a rasp, hammer, and a pocket-knife; a glue-pot and good glue, some odd pieces of hard wood for plugging the joints, as will be shown, and a few wire panel pins will also be required. The latter have butt-shaped heads, and can be purchased at any ironmongers. The only special tool needed is the rasp, which differs from the ordinary wood rasps, being deeper in segment, so that in section it is practically half round. A 1-inch rasp will be found the most suitable size, and can be bought at any well known tool dealer's. The seat is made of 1½-inch Bamboo for the main part, and the upright bars of ¾-inch. The Bamboo is imported in lengths of 6 feet 6 inches, and is to be bought at any oil and colour stores. In selecting the canes always pick out those whose knots are closest together, as they are the stronger, being the root-end of the cane. It will be noticed in fig. 123,^{1} that the back legs and arm rests are represented as having root-ends to form a finish. There is no difficulty in getting these, and the method of treating them will be explained below. The seat as drawn measures 4 feet 6 inches in length and 18 inches in depth; the other measurements are given subsequently; but first let it be shown how to make a good joint, one that is known as a "dowel joint," and illustrated in fig. 123,^{2}. The piece marked A represents a leg, and B a horizontal rail which it is required to join to A. The end of the rail B is first rasped out to nearly a semi-circular shape to fit neatly against the leg A, and any pith found inside the Bamboo is to be scraped out with the knife. Now get a piece of wood (hard in preference) 6 inches long that will fit tightly in the Bamboo (B) without having to use force to get it in. Leave it in temporarily whilst cutting a hole in the upright A that will just take this wood plug. The hole is cut with a centrebit, working it to and fro to avoid any possibility of splitting the cane. Again scrape out the pith and roughen the immediate surface round the hole with the rasp, as represented by the dots. Now take the wooden pin and glue it into the hole as far as it will go; then apply plenty of glue to the remainder of the plug and to the inside of B and slip it on over the dowel, and in addition secure the plug with two 1¼-inch wire panel pins, through the rail on each side and one on each side of the leg. Two chief points to remember are: first, to use plenty of good glue, and to see that it is hot. Any that oozes out easily chips off when dry, as it will not hold to the surface of the Bamboo unless the latter is roughed first; and, secondly, remember that all holes, even for thin wire pins, must be drilled with an ordinary awl. Never attempt to drive in a wire pin without first making a hole for it, or otherwise the Bamboo will split, as it has a long, straight grain. For indoor furniture, the addition of wire pins in a joint of this kind is not necessary; it is only done when the work is likely to be exposed to the weather, whilst the glue is protected by the varnish which the seat is finally coated with.

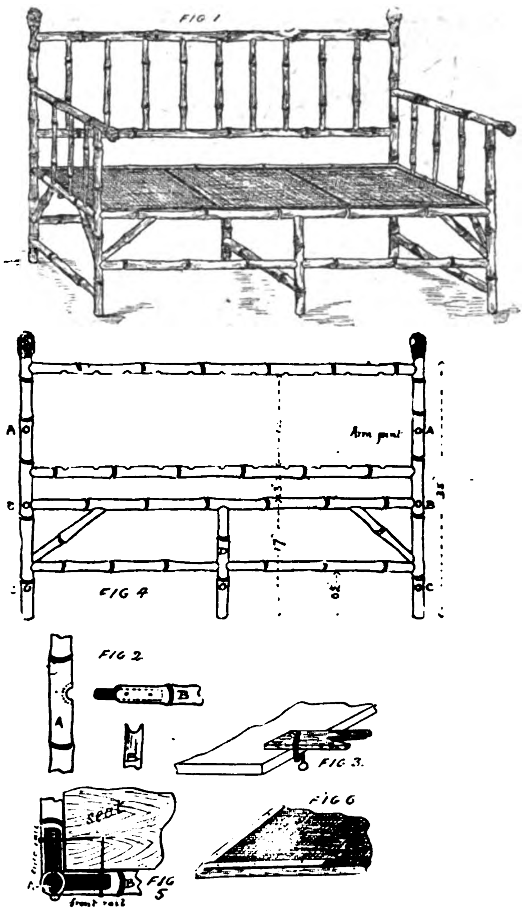


FIG. 123.—A BAMBOO GARDEN SEAT AND DETAILS SHOWING CONSTRUCTION OF SAME.

When rasping the end of a Bamboo, instead of holding it in a vice, the proper way is to provide a piece of hard wood, about 8 inches long, 5 inches wide, and ⅝ inch thick, and cut a V-shaped jaw in one end (see fig. 123,^{3}). This is then clamped to the bench or table; the Bamboo can then be held with one hand in the jaw, whilst the other hand has the rasp.

Another joint necessary to understand is called "direct doweling," and this is used in fixing the thinner uprights into the main framework. In this instance these uprights are of ¾-inch Bamboo, and should be cut 1 inch longer than they appear when fixed, which allows ½ an inch at each end for letting into the 1½-inch canes. Select them as true to size as possible, then rasp the ends to a slight taper, so that they will fit into a ⅝-inch hole. Holes of this kind are cut in the horizontal canes with a centre-bit; tap the uprights in gently with a hammer, and then secure each end with a wire pin.

The third and last joint necessary to be familiar with is that one used in fixing the diagonal stay pieces shown under the seat to give it rigidity. The Bamboo being cut to the length required, the ends are rasped to fit neatly, then insert a plug at each end, fixing it with glue and pins, and rasping it to the shape already made in the Bamboo; roughen the surface against which the stays will fit, and then fix them with glue and using 2-inch wire pins. These few particulars being mastered, we can now proceed with the construction of the seat. All measurements given are "when fitted," so that allowance must be made for rasping the ends of the horizontals, say ½ inch for each end. First cut the legs, the front ones being 27 inches long, the back ones 35 inches to the top rail. Allowing for the root ends, the back legs are cut 38 inches over-all. Of course these root-ends are optional, but they make a very novel finish, besides which the root-end is the strongest part of the cane. When bought they are generally in their rough, natural state, and require burning by holding them in the flame of a spirit lamp or a Bunsen burner, the latter of course where gas is used, and when softened by the heat, trim them off with a rasp to a conical shape. The back legs are connected with four horizontal rails, two forming the back, then comes the seat rail, and below this, the fourth rail, to which the centre leg or support is connected. Fig. 123,^{4} shows a plan of the back, and in it are given the various measurements for the positions of the rails. It will be seen that the bottom rail is in two lengths on account of the centre leg D, and the method of making the joint is similar to that shown in fig. 123,^{2}, except that the hole in the upright goes right through, and the dowel or plug must be proportionately longer, extending say three inches on either side, the two ends of the rail being fitted on to it. All the various joints must be made and temporarily fitted, for example the uprights between the two top rails must be fixed first before the rails are permanently fitted on to the legs.

The holes shown at A, B and C, fig. 125,^{4}, are for the arm-rests, side seat-rails and bottom side-rails respectively, and with regard to the side seat-rail B, as it comes on a level with and at right-angles to the front and back seat-rails, the dowel must be shorter, as it butts against the one already made, so that to give it the necessary strength it has the addition of a 3-inch round-headed screw as shown in section in fig. 123,^{5}. The arm-rails come 9 inches above the seat-rails. The back section being completed, including the holes for the side joints, joint up permanently, clamping it together with stout cord, and put it on one side, taking care that all parts are squared and that there is no twist in the frame.

The next section to prepare is the front, consisting of the two front legs, centre leg, seat-rail and lower rail, the top of the outer legs being rasped to take the arm-rails. There is but little work in this section, and whilst it is setting prepare the side-pieces, the rails being 15 inches long when fitted, the depth of the seat being 18 inches outside to outside measurement. The bottom side-rails are 3 inches lower than the front and back ones, also the one connecting the centre legs; whilst the arms are about 20 inches long when fitted, including the root ends. The upright rails for the back are $4\frac{1}{2}$ inches apart, whilst those on the sides are $3\frac{3}{4}$ inches from centre to centre.

Having connected the front and back sections, next fix on the diagonal stays, and the framework is completed. Be careful not to hurry the work; let the glue in the joints set thoroughly, and the result will be a perfectly rigid and substantial seat-frame.

With regard to the seat itself, get two boards of $\frac{3}{4}$-inch deal to make up the width of 15 inches, and fix them together with stout battens underneath. The seat must just fit neatly within the seat-rails, so that it will be necessary to rasp the knots on the Bamboo on the inside of the framework, flat, and fix the seat with stout wire pins through the frame, as shown in fig. 123,^{5}. Before doing this, however, it is covered with yellow Japanese matting, which in a good quality costs 1*s*. a square yard. Lay the matting on the wood, allowing a little margin all round, and fix it with split cane on the top edge, and also at equal distances from back to front, as shown in fig. 123,^{1}. The cane, known as beading-cane is $\frac{3}{8}$ inch thick, and costs 2*d*. a length of about 8 feet. This is then split in halves lengthways with an ordinary knife, and fixed with $\frac{3}{4}$-inch wire beading-pins. When fixed, trim off the surplus matting, and then nail the seat into the frame. Fig. 123,^{6} shows how the split beading-cane is fixed. All that remains to be done now is to clean off the joints by chipping away any superfluous glue, and finally to give the structure, including the matting-seat, two coats of good copal varnish, not spirit varnish, as this will not stand the weather. By carefully covering all parts with the varnish, the glue will not be affected by the weather. The whole seat should be revarnished at least once a year. *S. W. N.*

FOREIGN CORRESPONDENCE.

THE GRAPE-FRUIT.

IN regard to Mr. G. Marshall Woodrow's note on Grape-fruit, on p. 171 of the *Gardeners' Chronicle* for March 18, I beg to state that the words "Grape-fruit" and "Pomelo" are recognised as synonyms by good pomological authorities. Grape-fruit is also given in the *Century Dictionary* as a synonym, and not as a variety of Pomelo. It would be interesting to know what fruit Mr. Woodrow refers to as Grape-fruit, and why he refers to it under that name in contradistinction to the Pomelo. *H. C. Henricksen, United States Department of Agriculture Experiment Station, Mayaguez, Porto Rico.*

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Leaf-Blister or Curl.—In consequence of the cold and changeable weather, trees in exposed positions and ineffectively protected are attacked by the leaf-blister fungus, Exoascus deformans. The first stage can be detected by a pale, powdery bloom on the underside of some of the leaves similar to an attack of mildew. If allowed to continue unabated the disease develops quickly, and soon the whole leaf is in a malformed and useless condition; the young shoots are likewise attacked, and the tender growths ultimately shrivel and die. Spray such trees twice each week with sulphide of potassium at the strength of half-an-ounce dissolved in 1 gallon of warm soft water. Continue the sprayings until healthy growth has recommenced, applying the solution if possible in the evening, when the sun's rays are not directly on the trees. All infested leaves and shoots should be cut down to a point where the growth is healthy, and the attacked portions burnt. Syringe the trees each afternoon sufficiently early for the foliage to become dry before nightfall.

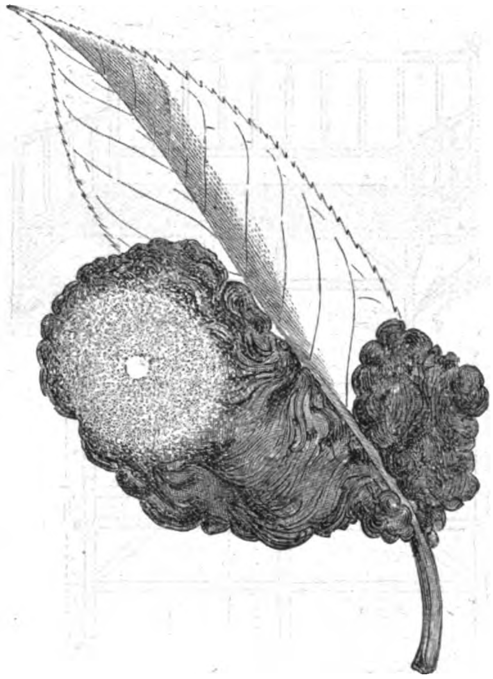


FIG. 124.—PEACH LEAF AFFECTED WITH "BLISTER" (EXOASCUS DEFORMANS).

"The Yellows."—Frequently Peach and Nectarine trees suffer from this disease, and in most cases it is the result of the roots and root-fibres having descended into an unsatisfactory rooting medium, or because the drainage is inefficient and stagnant, or there is a lack of mineral constituents in the soil. In cases where the drainage is known to be good, apply a dressing of superphosphate of lime and muriate of potash, mixed at the rate of two parts of the former to one of the latter. An application of 2 oz. to the square yard often serves to correct the evil.

Orchard Trees which were "headed" down and grafted last season will now require some support to the grafts, which otherwise would be liable to be blown off as growth proceeds. Strong sticks or canes, if made secure to the main branches, will be sufficient to hold the grafts by means of ties. All growths emanating from any part of the tree, excepting the grafts, should be removed at once. Such treatment should be applied to all trees that were grafted and budded last year.

Suckers.—Remove suckers from the base of all fruit-trees immediately they make an appearance. Persistent attention to this matter is necessary, especially in the case of Plums.

Gooseberry and Currant Plants which were planted out from the "cutting bed" this spring will now be making growth. If they are required to form bushes the shoots may be allowed to grow, excepting the lower ones, for at least 1 foot of clear stem is necessary. If standards are required, pinch all the shoots excepting the leading one. Should fan-trained or double or treble upright cordons be required, cut out entirely all the branches that will not be required for the proper formation of the trees.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Winter-flowering Begonias.—These plants having had a sufficient period of rest are now showing signs of growth, and should be transferred to conditions in which the growth will become healthy and strong. Of the many winter-flowering subjects none, to my mind, is brighter or more useful when grouped together than these Begonias, which were obtained from crosses between B. socotrana and various tuberous-rooted varieties. They are not difficult of culture, but they nevertheless require close attention from the time the cutting is inserted until the plant flowers. As the plants show signs of renewed activity they should be stood in a house where shade, heat, and moisture can be given them. Beyond an occasional syringing overhead, no water will be needed until a moderate amount of growth has been made. Cuttings may be taken as the growths become sufficiently advanced, but three of the strongest growths should be allowed to remain on each plant. When these three shoots are from 4 to 6 inches in length, the plants should be repotted after carefully removing the loose soil from about their roots. A suitable compost is one of fibrous loam two parts, leaf-soil one part, and a little broken dried sheep-manure and silver-sand added. Turn over and mix these together thoroughly before using the material. Be careful to avoid the use of pots of a larger size than is necessary. In the first instance the pot should be just sufficiently large to receive the bulb, and allow of a very little of the new compost being added around the "ball"; but the plants may be potted-on when the first pots have become moderately filled with roots. It is of vital importance that great care should be exercised during the whole season in the application of water to the roots. The plants should be immersed or syringed in a solution of Quassia Extract not less frequently than once a week. During this period of growth let the plants be kept in a "brisk" warmth and a moist atmosphere, shading them from the rays of the sun, and syringing them frequently overhead. Of several varieties, the most useful are in the following order: John Heal, Winter Cheer, and Ensign.

Coleus thyrsoideus.—This winter-flowering plant is very decorative, and may be raised easily from cuttings or from seeds. I prefer plants raised from cuttings, for I think they have a less tendency to make lanky growth. A few early cuttings may be inserted at the present time singly in small pots of soil composed mainly of peat and sand. Cuttings for raising the main batch of plants may be inserted at about the middle of June.

Thyrsacanthus rutilans.—A batch of cuttings should be inserted now in a propagating-frame, using old potting soil for the purpose. These will make useful plants in the first season.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Peaches and Nectarines.—Fruits in the earliest forced houses will now be ripe or approaching to that stage. Maintain a drier atmosphere and allow a free circulation of warm air from the time the fruits commence to colour. Discontinue syringing the fruits, but damp all available spaces in the house. When all the fruits are gathered the trees should be syringed with a suitable insecticide in order to remove red-spider and other insects; the trees should also be syringed twice daily with clear water to maintain the foliage healthy. Keep the laterals pinched, and remove all useless wood, also any that, having borne fruit, can be replaced by young shoots. Give the roots of the trees a good watering, and to any that require it supply an occasional application of liquid-manure. Mulch the trees again if necessary; this will be a preventive against dryness at the roots. Ventilate the houses to their fullest extent.

Succession Houses.—Continue to tie the young growths as often as it becomes necessary, at the same time giving the fruits full exposure to the sunlight. A good plan is to place small strips of wood across the wires and beneath the Peaches, and thus to expose the fruits well above the foliage. Mulch the trees, if this has not already been done, with fresh horse-droppings, and give plenty of water to the roots, with frequent applications of liquid manure. If the trees appear to require it, they may be allowed at intervals a light dressing of some suitable artificial manure. There is very little danger of over-watering trees that are growing in well-drained inside borders. Admit air freely on all favourable occasions, being always careful to avoid cold draughts. Maintain a steady temperature at night of about 60°. Nothing is gained by trying to hurry the growth of the trees until the stoning period is passed.

Later Houses.—Trees in these houses will now be rapidly growing, and the work of disbudding the shoots and thinning the fruits will require constant care. Pay careful attention to the ventilation of the houses and to the proper waterings of the roots. Syringe the trees twice daily during bright weather. In unheated houses this syringing should be done sufficiently early to allow of the foliage becoming dry before night-time. Newly-planted trees should be mulched and have their shoots carefully disbudded. In some cases it will be found necessary to pinch-out the points of the strongest-growing shoots in order to encourage a more even flow of the sap. Green-fly and other insect pests can be kept down by occasionally syringing the trees with Quassia-extract.

Figs in Pots. — As soon as the first crop of these fruits is removed, cleanse the trees from red spider, and afterwards give the same atmospheric treatment as for trees swelling their fruits. Thin the second crop of fruits freely if the trees are intended to supply an early first crop of fruit in the following year. Discontinue the use of manure, and apply less syringing to trees that are maturing their fruit. Maintain a free circulation of warm air in the house. Give liberal treatment to trees that are swelling their fruits, and endeavour to keep the plants clean by vigorously syringing them with water on bright days.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Hardy Biennials.—Sow seeds of biennial plants in moderately-rich ground facing to the east. If the soil is of a heavy nature scatter some sifted leaf-mould over the surface, and if weather is dry thoroughly moisten the soil before sowing the seeds. The seeds may be sown broadcast or in drills. If they are sown broadcast mark off beds 4 feet wide, and sow thinly. Slightly covering the seeds with fine soil that has been passed through a half-inch sieve assists germination. If the weather is very dry, afford the beds a little shade by using mats or tree-boughs. These notes apply to Wallflowers, Canterbury Bells, Sweet Williams, Rockets, Œnotheras, &c. For planting in the wild-garden the following strong-growing hardy biennials are effective, and may be sown at the present time:—Cnicus eriophorus, Michauxias, Onopordons, Anchusa capensis, Reseda alba, Silybum, Verbascum Chaixii, V. olympicum, V. phlomoides, and V. libani.

Annuals.—Proceed with the sowing of annuals, bearing in mind that the Mignonette requires a considerable depth of rich soil, and that Shirley Poppies are brilliant in effect and of simple culture. Double Wallflowers, if desired, can be propagated now, by inserting cuttings in sandy soil under handlights in a shady place. Choose short growths that are moderately firm. Cheiranthus Allioni and C. alpinus can best be propagated just after the flowering season.

Miscellaneous Work.—Perennial Poppies that were sown in heat and subsequently pricked off are ready for being planted out. Papaver alpinum and P. nudicaule varieties are suitable plants for cultivation in rockeries and dry places. P. pilosum and P. orientale should be planted in borders. Plant out Gaillardias. Divide the clumps of Schizostylis coccinea, and replant them in a warm situation. Afford these plants plenty of water during dry weather.

The Wild Garden.—The following are blue-flowering plants that will bloom in August and onwards:—Delphiniums and Aconites, which are a little later and flower well in ordinary soil, even under the shade of trees. They have a good effect if associated with Phloxes, Solidagos, &c. The following are good varieties:—Aconitum autumnale, A. napellus Brauni, A. n. longibracteatum, and A. n. strictum, &c. Owing to the poisonous character of the plants, care must be exercised in planting them. Aster acris and Campanula pyramidalis succeed well in sunny positions. Salvia Horminum grandiflorum violaceum, if grown in rich soil and in an open aspect, makes a fine display in autumn. Salvia virgata, Symphytum caucasicum, Scabiosa succisa, Anchusa italica, Echium vulgare, and Cichorium Intybus are good; the last can be sown where intended to flower, also the annual Larkspur and Borage. Large clumps of Clematis Jackmanni and Sweet Pea Captain of the Blues are effective if properly supported with stakes. Amongst blue-flowering shrubs there are Caryopteris Mastocanthus and the Ceanothuses. Both species require sunshine and shelter from cold winds.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Leeks.—If seeds were sown early as advised, the plants will have filled the 5-inch pots with roots by this time and be sufficiently hardened to be transferred to the trenches prepared for them. The Leek being a very gross feeder requires a large quantity of stable manure. The trenches should be prepared as for Celery 2 feet deep and 18 inches wide for a single row, planting the Leeks at distances of 12 inches apart and sufficiently deep to cover the "ball" well. Immediately after planting place a brown-paper collar 6 inches deep round each plant by slipping it over the top. Then place a few inches deep of fine soil around it. When the heart of the plant appears above the top of the collar, the collar must be raised and more fine soil added, repeating the process until the stem is of the desired length, which may be 12 or 15 inches. Much watering and feeding will not be necessary until the plants have attained the desired length, and the ridge is well filled with roots.

Cardoons.—If well grown and properly blanched, the fleshy leaf-stalk or "ribs" of Cardoons make a "dish" at a season when there is not much variety in vegetables. For producing an early crop seeds should now be sown in small pots in a moderate degree of heat, but with free ventilation. When the plants have become large enough transplant them into trenches prepared as for Celery, putting the plants 2 feet apart. Afford water whenever this is necessary so that the plants may suffer no check. Seeds may also be sown in patches out of doors in fine soil. Sow a few seeds in each patch and thin them out to one plant only.

Celery.—Select a hard foundation in a suitable position and place about 3 inches deep of well-decayed manure over the space required, covering this with about 2 inches of fine soil. The Celery plants may be pricked out into this as soon as they are sufficiently large to handle, putting them 4 inches apart from each other. If treated in this way the plants will remove with compact "balls" of roots when they are required for planting into the trenches.

Potatos that were planted early on warm borders must be moulded up or given protection in some way as soon as the growth appears. On the morning of May 4 we had ice here of the thickness of a penny, and 5° of frost. We have only just completed planting such varieties as Up-to-Date and Northern Star, as the soil here is not favourable to early planting. Tubers that have sprouted in trays are superior to those planted a month earlier. The soil is in better condition than it was then, and we have the knowledge that every set put in is in perfect condition for making growth.

Box Edging.—If any of the Box-edgings need to be relaid, let the work be done now. If any blanks have to be filled up, let the plants be given the benefit of fresh soil. When spring frosts are past, Box plants stand clipping well, and cuttings about 6 inches in length inserted firmly in sandy soil will soon develop roots.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cultivation of Orchids in Summer.—The summer treatment of Orchids should now be practised whenever the weather is seasonable, with a view to secure atmospherical surroundings that will induce good sound growth in the plants. The warm or East Indian house should have during the daytime an atmospheric temperature ranging from 70° to 80°; the surface should be damped frequently enough to keep the atmosphere moist, and ventilation should be afforded gradually and efficiently through the lower openings. Shade from strong sunlight will be necessary. At about 3 o'clock in the afternoon close the ventilators and afford a final and thorough damping, and as the sun declines let the blinds be rolled up. Where the automatic sprayer is used, the necessary root waterings should be afforded before spraying overhead is done, or the surface of the compost may get damped, and give a wrong impression as to its condition beneath.

The Cattleya House should be treated similarly in the morning, but if the whole of the ventilators be closed in the afternoon, it is advisable to again open those on the leeward side an inch or two at night. If overhead spraying is done it should be performed in the morning, and expanded flowers should not be wetted.

The Mexican House may be treated in the same manner, excepting that shading should not be afforded until later, and it should be taken off earlier in the day. Top ventilation should also be admitted whenever the wind is not very cold or strong.

The Intermediate and Cool Houses should have free ventilation, but not severe draughts, and the atmosphere should be kept moist by frequent dampings. The plants in these houses require shading from all direct sunshine. The cool compartments should be kept cool, but not cold and clammy, and if fire-heat is not required to to raise the atmospheric temperature, it is advisable to have a little in the pipes to induce evaporation and promote the circulation of air at night. When the weather is dull or uncertain in character, the above cultural directions must be considerably modified, and overhead spraying must be confined to the warm houses, or it may not be necessary to practise it at all.

Dendrobium Phalænopsis and allied species, such as D. bigibbum, D. Statterianum, D. Gouldei, &c., after a long rest, are now pushing forth new growths. As soon as new roots are expected pick out the old material from plants that do not need to be repotted, and replace with new. In repotting the plants shake away the decayed material and cut off dead roots. Then fix the plants into pans by tying some of the pseudo-bulbs to the wires, half fill the pans with drainage material, and use equal parts of good fibrous peat and sphagnum-moss for placing about the roots. Suspend the plants in the most exposed and warmest part of the East Indian-house, or in an ordinary plant stove, as they need much heat and almost unobscured sunlight. For some considerable time after having been afforded fresh compost few direct waterings are needed, provided the surroundings be kept moist, but when rooting freely syringe the plants two or three times a day, and dip the pans in water when the material shows signs of drying. Other Dendrobiums that have arrived at the rooting stage may be treated liberally with water whenever the weather is favourable to evaporation. Do not permit the atmosphere to become close and stuffy, and on occasions when ventilation cannot be employed freely, restrict the use of water.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, MAY 17	Royal Botanic Society's Show in Regent's Park. Devon County Agricultural Society's Show at Exeter (3 days).
FRIDAY, MAY 19	Royal Botanic Society, Lecture, 4 P.M.
SATURDAY, MAY 20	Paris International Horticultural Exhibition (9 days).

SALES FOR THE WEEK.

MONDAY, MAY 9—
Palms, Lilies, &c., at Stevens's Rooms, at 12.30 P.M.

WEDNESDAY NEXT—
Palms, Liliums, Carnations, Ferns, Begonias, &c., at 67 & 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY NEXT—
Orchids in variety, by order of Messrs. Stanley & Co., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —54·8°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, May* 10 (6 P.M.): Max. 69°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 11 (10 A.M.): Bar., 30·2; Temp., 61°. Weather fine with bright sunshine.

PROVINCES.—*Wednesday, May* 10 (6 P.M.): Max. 68°. E. coast of England; Min. 51°, N.W. coast of Scotland.

Rust Propagation through Seed.

THERE is a curious problem in connection with the parasitic rusts which infest cultivated plants which has never received a satisfactory solution. It is whether there is any ground for the belief in the propagation of rust through the medium of the germinating seed of the host plant. It may be well to collect all the facts available which can throw any light upon this subject, so that if proven, or even fairly suspected, cultivators may endeavour to guard against one source of infection.

Our valued correspondent, Dr. COOKE, favours us with the following note on this subject:—

"I have been led," he says, "to these reflections by a recent perusal of some remarks in one of the periodical pamphlets issued by the United States Department of Agriculture, which touches upon this important problem. In the spring of 1893, it observes, the writer's attention was called to a very young rusted seedling of Euphorbia dentata. In this instance, as is usually the case with young plants of this host, the pods were first badly affected by "æcidia." This fact, taken with the common observation that the seed-pods were usually affected by all stages of the rust, led at once to the thought that it was a case of rust propagation through the medium of the germinating seed of the host.

To test the theory of rust propagation in this manner experiments were instituted and carried out in that thorough manner which characterises the experiments of the United States Department. It is unnecessary to recapitulate the details of these experiments, which are set out in the Bulletin alluded to.* In 1895 rusted seeds of Euphorbia were planted at Washington. From these three plants grew, which were kept under a bell-jar. Soon one of the plants rusted badly, first with the "æcidium," then with a slight amount of "uredospores," and later with "the teleutospores."

In the following year a third series of experiments was conducted, with similar results. 'The proof that the rust actually penetrates the hulled seed is easily obtained, not only from microscopical demonstration, but also from the fact that the actual "peridia" may often be seen with the unaided eye in the seed. These experiments, however, further demonstrate the ability of the rust to propagate itself through the medium of the germinating seed of the host, and also point to the probability that this is even the common method of reproduction in Euphorbia dentata. To this record must be added the testimony of T. S. RALPH in the *Victorian Naturalist* (vol. vii, p. 18), of a rust attacking the seed of Senecio vulgaris, when it is stated that 'with the microscope we were able to trace the fine yellow sporular matter into the covering of the seed, and into the seed itself.'

I am reminded also of some experiments made by Dr. ERIKSSON with Puccinia glumarum on Wheat, which by themselves and whilst unsupported received but little credit. At the time when the Hollyhock disease was at its height in this country Mr. WORTHINGTON SMITH, in the pages of this Journal, adduced evidence of the presence of Puccinia malvacearum in the seeds of the Hollyhock (see July 15, 1882, p. 87).

Another instance came within my own experience in 1866 in connection with the common Celery-rust, Puccinia Apii, which suddenly made its appearance in a garden at Highgate. A friend sent me some specimens, requesting to be informed of the name, and at the same time remarked that he had two separate stocks of Celery-plants growing side by side in the same garden, but that only one stock was attacked by the parasite. The seed which produced the infected plants had been given to him by a fellow-gardener, because he had not sufficient of his own, and this friend has since informed him that his own plants were similarly affected. The seed from which the healthy plants were raised was of his own saving, and not a pustule of the rust could be detected upon the leaves. The conclusion at which any one would arrive, in accordance with the evidence, was that the germs of the disease were present in some manner in the seed, or if not why did not all the celery plants from whatever source in the same garden and under the same conditions, suffer alike from the parasite? This is an important point to settle, because if the common rusts and similar diseases can be propagated through the medium of the germinating seed of the host plant, it is of little use to try the effect of fungicides, when the plant is permeated by the virus of the disease.

The examples which I have furnished may perhaps be added to from the experiences of other observers, but even as the matter now stands there is grave reason for the belief that rust propagation is possible through the medium of the germinating seed of the host plant." *M. C. Cooke.*

---

* *Investigations of Rusts*, by M. A. Carleton, in Bull. No. 63, July, 1904.

THE KEW GUILD DINNER.—We are requested to remind our readers who are "Old" Kewites that the annual dinner will take place at the Holborn Restaurant, on the 29th inst., at 7.30 P.M. The Secretary, Mr. WINN, Royal Gardens, Kew, would be glad to hear before the 22nd inst. from all who intend to be present.

RAILWAY RATES.—The President of the Board of Agriculture and Fisheries has appointed Mr. JOHN FRANCIS SYKES GOODAY to be a member of the Departmental Committee on Railway Rates for agricultural produce in place of Mr. ALFRED BALDWIN, M.P., resigned.

"BOTANICAL MAGAZINE."—The plants figured in the May number are:—

Prunus pseudo-Cerasus, Lindley, t. 8012.—To this lovely flowering tree the following synonyms are attached, which we cite as the tree is cultivated in our gardens under most of the names mentioned:—Prunus paniculata, *Botanical Register*, t. 800; Cerasus Sieboldi, *Revue Horticole* (1866), p. 371; C. Lannessiana, *Revue Horticole* (1872), 198, and (1873), 351c., t.; C. caproniana flore roseo-pleno, *Flore des Serres* (1875), t. 2238; C. serratifolia, Carrière, *Revue Horticole* (1877), 389; C. Watereri, *Hort. ex Lavallée Icon. Arbor. et Frut. Segrez*, p. 119.

Rhipsalis dissimilis var. setulosa, t. 8013.—A curious species, with slender, straggling stems, the branches of which are sometimes verticillate, and bear small yellow flowers.

Listrostachys bidens, Rolfe, t. 8014.—A curious West African Orchid, with sessile, ovate, lanceolate green leaves margined with yellow, and with pendulous racemes of small cream-coloured, fragrant flowers. Kew.

Colchicum libanoticum, Ehrenberg, t. 8015.—A charming species from the snowy parts of the Lebanon. The flowers are of medium size, white, flushed with pink or rose. In its native country it flowers in June, but in the alpine-house at Kew the blooms were produced in December and January.

Hippophae rhamnoides, Linn., t. 8016.—A well-known British shrub, the female plants of which produce a profusion of orange berries.

FRAUDULENT REPRESENTATIONS.—We had occasion to draw the attention of our readers, in the issue for April 8, to certain fraudulent representations that had been made by a person in the Liverpool district when calling upon gardeners and others. Information to hand shows that a man was recently convicted of such practices in the same district, and was sent to gaol for six months with hard labour.

ROYAL WARRANT FOR FLORISTS.—We are informed that Messrs. FELTON & SONS, 7, 8 and 9, Hanover Square, W., have recently had the honour of receiving a Royal Warrant of appointment as florists to His Majesty the KING.

GUNNERSBURY HOUSE.—At this seat of progressive horticulture, Mr. HUDSON is now engaged in constructing for Mr. LEOPOLD DE ROTHSCHILD an "annual" garden. A suitable site in a sheltered position has been selected, so that no doubt this will form an additional feature of interest in a garden already rich in variety and interest.

BOTANICAL LECTURES.—Dr. A. B. RENDLE, M.A., is delivering a course of six lectures, at the Chelsea Botanic Gardens, on the "Tubifloræ." The lectures take place on Fridays at 6 P.M., and the first was given on May 5.

THE HENRY ECKFORD TESTIMONIAL.—Mr. HORACE J. WRIGHT, 32, Dault Road, Wandsworth, announces that the sum received until May 8 was 643 shillings.

"**AMATEUR GARDENING**" comes of age on May 7, and is very naturally and justly jubilant over its successful adolescence. Now that it is entering upon the manhood stage we doubt not that it will be more useful than ever to the amateur. The vast diffusion of a taste for gardening on which our contemporary comments is illustrated by the increase in the number of gardening journals and by the increased circulation of the older ones. Whether there has been a proportionate increase among gardeners in the knowledge of plants and of their life-history is, we think, doubtful; yet it is to this increased knowledge we must look for progress.

"**FLORA AND SYLVA.**"—The May number contains, among other articles, one on two rare Croci, C. caspius and C. dalmaticus, by Mr. BOWLES; a useful article on Nerines, by Mr. O'BRIEN, with an excellent illustration of N. Bowdeni; a note on giant Reeds (Arundo Donax), which was a feature in our gardens long before Bamboos were thought of. The curious hybrid or alleged hybrid Medlars come in for notice. Too much cannot be said in praise of the Algerian Iris, I. stylosa, or of the Incarvilleas. Scented Pelargoniums find an exponent in Miss WHITE, whose article is accompanied by a good illustration of the variety known as "Lady Mary Fox." Gazanias (here called, we know not why, "Treasure Flowers") form the subject of a garden-monograph based on the researches of M. JULES RUDOLPH.

FLOWERS IN SEASON.—Messrs. R. D. WHITMORE & Co., The Rose Nurseries, Sutton-at-Hone, Kent, have sent us excellent flowers of the following varieties of Roses: Catherine Mermet, The Bride, Kaiserin Augusta Victoria, Bridesmaid, and Liberty. The very long stems attached show by the foliage that the plants are given unusually good cultivation.

NATIONAL CHRYSANTHEMUM SOCIETY.—It has been suggested that after such a serious and prolonged illness as our old esteemed friend and Secretary, Mr. R. DEAN, has passed through, and is still suffering from, it would be a fit and proper time for the above Society to initiate and organise a fitting testimonial, and invite the co-operation of all lovers of horticulture in showing their sympathy practically, as a recognition of long and indefatigable services rendered to the Society (ever since the lamented death of Mr. W. HOLMES, the first secretary to the Society) and to the horticultural world in general. It is thought the form which the testimonial shall take, as being most practicable and useful, should be a purse of money, without any part of it being spent on an illuminated address or anything of the kind, and it is hoped that all subscribers will send in their donations early, so that arrangements may be made to present the testimonial to Mr. DEAN at Carr's Restaurant, 264, Strand, on July 12 (the second day of the Royal Horticultural Show at Chelsea). *J. H. Witty, Hon. Secretary and Treasurer to the Testimonial Fund, St. James's Villa, Swains Lane, Highgate.*

THE LATE PROFESSOR EMILE LAURENT.—An imposing ceremony took place on Sunday, May 7, at Gembloux, Belgium, on the occasion of the unveiling of a *médaillon*, executed to commemorate the late Professor and African explorer, who died on his homeward journey from the Congo, where for the third time he had been to collect plants, especially such species as possess economic value. The numerous assembly comprised representatives of French and Belgian societies, many former and most of the present pupils of the Institute at Gembloux, the staff of professors, also ladies and intimate friends of the deceased. Having passed in review the services rendered to science in general and to the Agronomic Institute in particular by Professor LAURENT, who from the simple village school rose by his own merit and by hard work to the proud position which he so worthily occupied when he undertook his last voyage, the various speakers drew attention to his method of tuition, and concluded by saying that Professor LAURENT being a man of incontestable merit, he had in that way traced a line of conduct which should be followed with advantage by his successors. Professor LAURENT was an occasional visitor to English horticultural establishments and kindred institutions, in which he always took the greatest interest, and a portrait of him appeared in the *Gardeners' Chronicle* for March 12, 1904.

OVERSEA SUPPLIES: APRIL.—Compared with April of last year, the IMPORTS show a drop of £1,898,937 — the totals being for last month £43,282,826, for April in last year £45,181,763. The respective class values in comparison are:

IMPORTS: DESCRIPTION OF PRODUCE.	1904.	1905.	Difference.
	£	£	£
Class I. — Cereals, and other field crops — Wheat, Barley, Oats, &c.	5,147,545	5,283,883	+136,338
Class II.—All other food cultures — Tea, Coffee, Fruit, &c.	4,328,340	3,736,420	−511,920
Class III.—Used in manufactures — clothing, household goods, &c....	6,324,202	6,139,569	—184,633
Class IV. — Miscellaneous — including seeds, flowers, &c.	1,585,411	1,661,484	+79,073
Values of Produce...	17,385,498	16,874,356	—511,142

Our fruit supplies were as follows:—

IMPORTS—APRIL.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	171,403	139,631	−31,772
Apricots and Peaches	41	37	−4
Bananas	93,793	144,776	+50,983
Gooseberries	2	...	−2
Grapes	3,725	7,270	+3,545
Lemons...	25,649	34,868	+9,219
Nuts—Almonds ...	18,762	24,499	+5,737
Others used as fruit	40,276	39,990	—286
Oranges...	265 524	172,206	—93,318
Pears	1,945	4,684	+2,739
Plums	...	249	+249
Strawberries	12	2	−10
Unenumerated ...	12,818	13,519	+721
Vegetables, raw—			
Onions ... ...bush.	103,327	160,233	+56,906
Potatos ... ... cwt.	321,059	62,163	—258,896
Tomatos ... ,,	75,297	90,992	+15,695
Unenumerated ,,	75,566	54,492	−21,074
Totals ...	1,209,209	949,641	—259,568

We note that the supply of fresh flowers last month is valued at £32,146, as against £42,638 for the same month last year—a decline of £10,492. An effort is being made to supply the wants of Northern China in the shape of forest products from the woods of Japan, and this new development is to be entrusted only to representatives of native firms who can show a large yearly cash reserve-balance at bank in "yen," a provision which will regulate contracts. Our own supplies of wood and timber show an increase this month, a novelty of recent times; thus the values for last month were equal to £1,252,133, against £1,110,954 for the same period last year—difference + £141,179. To finish the tale for the month we should state that the EXPORTS are given at some £24,138,468, as against £23,484,834, a gain of £653,634—not much, but still a gain.

THE SMALL HOLDINGS ACT, 1892.—The President of the Board of Agriculture and Fisheries has appointed the Rt. Hon. the Earl of Onslow, G.C.M.G., the Rt. Hon. the Earl Carrington, G.C.M.G., the Rt. Hon. Jesse Collings, M.P., Sir Ralph Anstruther, Bart., Major Patrick George Craigie, C.B., Mr. Charles Bidwell, Mr. William Brown, Mr. Francis Allston Channing, M.P., Mr. James Long, Mr. John William Willis-Bund, and Mr. Robert Armstrong Yerburgh, M.P., to be a Committee to enquire into the administration and working of the Small Holdings Act, 1892; to examine the various arrangements made by landowners in recent years for the provision of smaller agricultural holdings; to report as to the conditions under which such holdings are most likely to be attended with success, and as to the measures which may most advantageously be taken, either by legislation, co-operative association, or otherwise, to secure the increase of their number. The Earl of ONSLOW will be Chairman of the Committee, and Mr. THOMAS HICKLING SUTTON, of the Board of Agriculture and Fisheries, will act as Secretary.

PAUL JONES.—A correspondent sends us a newspaper clipping which contains the following curious story of a "gardener." We cannot give the name of the paper from which we take the following extract, for the title had been removed. In the circumstances we hope we shall not be accused of piratical appropriation:—

> "Americans are searching for the body of PAUL JONES, whose memory they desire to honour. In his native country it is doubtful whether, even in these days of memorials innumerable, anyone would desire to commemorate the exploits of the redoubtable pirate chief. But if such a proposal were ever made, his native shire of Kirkcudbright would have the first claim. Like his father, JOHN PAUL, to give him his real name, was a gardener, and worked not far away from St. Mary's Isle, formerly the seat of the Earls of SELKIRK. St. Mary's Isle has a curious association with the pirate.
>
> The young gardener had run away to sea, and after committing his first murder changed his name to PAUL JONES. In 1798 he visited British waters, and conceived the bold plan of carrying off the Earl of SELKIRK and holding him to ransom. Fortunately for himself, the Earl was in England at the time; but PAUL, determined to make St. Mary's Isle remember the gardener, sent some of his crew ashore with orders to bring him the Countess's silver plate.
>
> The feelings of the lady may be imagined when she saw these sea-dogs at her door. She behaved apparently with courage and good sense, and at once complied with the demand by handing over various articles of silver plate, evidently enough to satisfy the privateersmen, for they departed without further ado; but PAUL JONES did not keep his booty long. The robbery was brought to the notice of BENJAMIN FRANKLIN, then representing the newly-fledged American Republic in Paris. The consequence was that when the commander of the *Ranger* (the privateer commanded by PAUL JONES) arrived at Brest he found a message waiting for him from the Ambassador, reprimanding him for his piratical act, and ordering him to send the stolen plate at once to Paris, so that it might be restored to its owner. This was in 1778, but in consequence of the war the Countess did not actually get back her property until seven years later."

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

HOMERIA COLLINA.—This pretty Cape bulb is now in fine flower in the open garden, and presents a lovely picture, there being over a hundred flower-spikes on the clump (see *Gard. Chron.*, August 11, 1888, p. 163, fig. 19). The flowers are charming in colour, of an apricot-pink tint flushed with orange and having a bright yellow eye surrounded with faint purple pencillings. They are 2½ inches in diameter, four or more being borne on an arching stem about 30 inches in length, and the leaves are 4 feet in length and rather over an ½ inch in breadth. The flowers close in the evening and remain shut during the night. In the same border the brilliant Sparaxis Fire King, S. grandiflora and Freesia refracta alba are still in bloom. It is curious that the Homeria should be so uncommon, as it appears hardier than the Sparaxis, and much more so than the Ixia, which dies out in this garden. It increases very rapidly, the small clump given me three years ago yielding, when lifted last autumn, over 250 bulbs, 150 of which I gave away, only retaining the largest. The chief drawback in the cultivation of the Homeria arises from the fondness of snails for the succulent stems. The snails climb to a height of 18 inches or 2 feet, and then eat through. A nightly watch is necessary when the flower-stems are about a foot in height, in order to destroy these visitants. *S. W. Fitzherbert, South Devon.*

THE LATE GALE IN SOUTH DEVON.—Much damage was done on April 30 at the mouth of the Dart by the severe gale which caused so many disasters at sea. It commenced from the south-east, blowing into the harbour's mouth as through a funnel, with tearing hail squalls, and gradually veered to the south and south-west. The foliage of the Potatos is perfectly black and laid level with the ground; the expanded fruit-blossom and the young leaves of the trees are scared. Cytisus racemosus and Banksian Roses 20 feet high against a house are brown and shrivelled as if by fire. The foliage and flower-buds of hardy plants, such as Clematis montana and Lilacs, are ruined, and a fine tree of Acacia verticillata just coming into blossom has been blown down. Out of eight good plants of Ostrowskia magnifica all but three have been broken off at the ground level, and the rest have not a single perfect leaf remaining. Pages would be required to recount the mischief done in surrounding gardens. I have received a letter from a well-known amateur in the neighbourhood of Penzance, saying that more damage had been done by this gale in his garden, which contains a most valuable collection of Australian and New Zealand shrubs and plants, than by any he has experienced during twelve years at his present home, so that it appears the effects of this tempest have been felt over the whole of the south-west coast. *S. W. Fitzherbert, South Devon.*

BLACK CURRANT-BUD MITE.—May I remind readers of the *Gardeners' Chronicle* that the present is the proper time to attack this pest? During the months of May and June the insects change their quarters from the old buds which they have occupied last season into the young buds, and if the bushes are sprayed at intervals of ten days during the time named with a mixture of soft-soap and quassia—2 oz. of the former and 4 oz. of the latter to each gallon of soft water —the bushes will probably be found to be quite free of the pest at the end of the season. I say probably, because the result will depend somewhat upon the manner in which the mixture is applied and slightly upon the severity of the attack, but if one season's work will not effect a perfect cure two certainly will. After the leaves have fallen in the autumn examine the bushes, and if any "big buds" are to be seen pick them off and burn them; also give the bushes a dressing of manure to enable them to grow freely. The remedy is so simple and cheap that many people will not try it. Yet it can only do good, and no one who tries it will regret the experiment. If it cost many pounds per acre and needed the services of specialists to apply the remedy, it would no doubt have found more favour with the public. I say this because, although the remedy was described in the gardening papers a year ago, I have never heard of one single case of its having been tried. *A. H. Pearson, Lowdham.*

FUCHSIA SEEDLINGS.—It is very easy to raise seedling Fuchsias by sowing the seeds in the autumn, taking care to sow only those that are plump, firm, and of large size, and not the hollow and otherwise defective ones. As the seeds are very small they should be rubbed out of the ripe fruits on a clean fine cloth. When dry sow them at once in shallow pans filled with loam one-third and leaf-mould two-thirds, with a good proportion of silver-sand, and place the pans on a mild bottom-heat until germination has taken place, when the pans should be stood on a shelf in a warm pit, and the seedlings, when large enough, potted singly in thumb-pots. Mr. Burbidge, in his useful work *The Propagation and Improvement of Cultivated Plants*, asserts with truth that "there is yet plenty of new ground to be broken up in this genus. Many of the Chilian species have not been hybridised, and the newly-introduced F. procumbens, with its upright or erect flowers and slender drooping habit, fruits freely and will probably give a new race in the hands of the hybridiser. We have erect-flowered Gloxinias, and let us hope to see more erect-flowered varieties of Fuchsias with large blooms, since much of the beauty of the Fuchsia is lost at present unless its drooping flowers are seen from below." This fact is as true to day as in 1876 when it was written. An erect-flowered Fuchsia named erecta superba was mentioned in *Revue Horticole*, 1868, p. 407. The true species cross readily with the hybrids, and may be used to impart fresh life and vigour to the latter. Of the results of crossing modern varieties with F. fulgens, see *Gardeners' Chronicle*, 1875, p. 655. *F. M.*

THE ASSOCIATION OF ECONOMIC BIOLOGISTS.

APRIL 19, 20.—The first actual Congress was held in the University of Birmingham on the above dates. The President, Mr. FRED. V. THEOBALD presided. We are obliged to confine our report to those communications which are of horticultural importance.

Green-fly, &c.—The first paper read came from the President, and was entitled "A Plea for the Study of British Aphides in connection with Cultivated Plants." Mr. THEOBALD reminded his hearers that in 1904 plant lice, or aphides, were more in evidence than in any year during the last quarter of a century. Rare species were very plentiful, and common species swarmed. Many could not be identified at all, and disappeared from the trees and plants they infested as rapidly as they apparently made their appearance. Moreover, in 1904 he observed several aphides migrating in vast swarms, aphides that in previous years had been far from common in the locality. The enormous reproductive powers of these insects at certain times was well known, but we know nothing of the causes that regulated the reproductive phenomena—why an excessive reproduction took place now and again, accompanied by a vast active migration, or so-called "blight." One instance showing the unsatisfactory state of our knowledge in regard to plant-lice and cultivated plants might be taken in the case of the Apple aphides. The majority of writings by economic entomologists on Apple aphis were valueless, because they had treated two or three totally distinct species as one. In 1902 Saunderson worked at the Apple aphides in Delaware, and found that there were three common Apple aphides—viz., Aphis pomi, Aphis sorbi, and the commonest Aphis, a hitherto undescribed species, which Saunderson named Aphis Fitchii. With the object of seeing if this new species was our common spring and autumn aphis, he (Mr. Theobald) made collections in various parts of the country, and found Saunderson's species to be by far the commonest. This was very important, because the Aphis Fitchii was a well-known migrant. It fed on the Apple in spring and early summer, and was the cause of damaged buds, withered blossom, and deformed fruits, but only caused slight leaf curling. It left the Apples in early summer, and did not return until the autumn, when a sexual brood was produced. He was inclined to believe that the Aphis Fitchii migrated to corn and grasses. But Aphis pomi was permanent on the Apple, and was a great leaf curler, producing a terribly crumpled-looking leaf if allowed to work on unmolested. Aphis Fitchii hatched much earlier than Aphis pomi, and commenced to attack the Apples long before the blossom was open. Spraying was of use in spring for destroying this species; it is not useful, however, against Aphis pomi. It was therefore very important to know what Apple aphis they had to contend with. It was because they had not known what they had been giving advice upon that they got such varied results in spraying. Leaf-curling aphides were the most difficult to cope with, because the curl protected the plant-lice from any spray they chose to use. In fact, with such species as the Plum aphis and the Currant aphis it was only a waste of time and money to spray when the leaves were once deformed. A knowledge of the life-history of an animal pest was most important, for it would show us where one could attack it with some hope of success. A great deal was known about the vagaries of the Hop aphis that might be turned to advantage by the Hop grower. The Hop aphis came from certain Plums in spring, and many migrated back to them in autumn to deposit their ova on the Plums. Moreover, this ovation went on throughout the year on the Sloes and Damsons, so that there were successive winged generations flying to the Hops. Thus, to save the Hops, the farmer must wash his Damsons early in the year, and use drastic measures in destroying the hedgerows of Sloe. To prevent the rapid reproduction of the aphides, farmers should avoid using nitrogenous manures in large quantities, and should use a strong dressing for spraying the egg-laying generation before they had time to lay their eggs.

Dr. MACDOUGALL dealt with some Cecidomyid enemies of the genus Salix.

Mites.—Mr. WALTER E. COLLINGE (Birmingham University) submitted "A Note on some Species of Mites of the genus Eriophyes." He stated that he had found on Black Currant-buds mites that were larger than the Black Currant-mite, and had reason to believe that they had migrated from the neighbouring Hazels. If this proved to be the case, hedgerows of Hazel would have to be cut down to prevent them from becoming a source of infection. He was now experimenting to see whether the Hazel-mite would migrate to the Black Currant and continue to live there.

Economic Botany in the Colonies formed the subject of a paper by Mr. W. G. FREEMAN (Superintendent of the Colonial Economic Collection at the Imperial Institute, London). The Royal Botanic Gardens at Kew, in co-operation with the Colonial Botanic departments, he said, distributed economic plants throughout the Empire, and important colonial industries were directly traceable to this work. The Imperial Institute maintained colonial economic collections illustrating the products and resources of the colonies, and carried on investigations—scientific, technical, and commercial —to further the economic utilisation of colonial products.

THURSDAY, APRIL 20.

The Porosity of Wood.—Mr. HERBERT STONE read a short paper on this subject. It had been taken too much for granted, he said, that the mature vessels of dicotyledonous wood were very limited in length, and that they remained interrupted by septa at frequent intervals, as at the time when they were newly formed from the cambium. If so, of course they could not be looked upon as ventilating media. But if, as he believed, they were continuous tubes running the whole length of each annual cone of wood, then it was clear that important movements of water, vapour and air might take place in them. If this assumption were granted, then every decrease in the pressure of the atmosphere would permit water to escape from the vessels, and with every increase of pressure air would enter them to become saturated and to pass out again when the mercury rose. The whole of the argument depended on whether the vessels were continuous or not. To this end he had made a number of experiments by which he had ascertained that air could be blown freely through the wood of some dicotyledonous trees in the direction of their vertical axis. He had employed Ash, Birch American Birch, and Oak. In applying the results of his experiments to practice he believed that high temperature was less adapted to the drying of wood than frequent alterations of atmospheric pressure. Heat, when it had penetrated into the wood, would cause expansion of the water vapour within, which would then pass outwards. But it must act on the outer layers first, and it was uneven and violent in its action, causing twisting and shakes. The employment of fans to keep the air moving was good, but they were local and superficial in action. Timber suffered from keen draughts as badly as from heat. If mechanical means were necessary the most rational were such as kept the timber cool and the air dry, and provided frequent fluctuations in the pressure of the air.

Springtails as Injurious Insects.—Professor CARPENTER read a paper on this subject. Every student of insects, he said, was more or less acquainted with the group known as springtails. They were small wingless insects, which he believed to be primitively wingless. They had hitherto attracted little attention from the economic biologist, because they had never been regarded as injurious to cultivated plants—at least not to any extent. During the last two or three years he had noticed several cases in which the springtail had been the primary cause of injury to cultivated plants. They occurred in large numbers in damp earth, and the plants which had come under his notice as having been injured were Beans and Bean seedlings, the roots of Cauliflower and Cabbage, various kinds of bulbs, and also fallen fruit. The insect was but a millimetre or a millimetre and a half in length, but when associated in large numbers they did a considerable amount of damage. As to the method of destroying them, Professor CARPENTER pointed out that they had no system of air tubes, but breathed through the whole surface of the skin. They were therefore very intolerant of dry conditions. An application of lime was usually recommended for getting rid of the creatures, and it succeeded as a rule. In the course of a short discussion the Chairman remarked that the springtail was found to be extremely injurious in glasshouses, and was especially damaging to young Orchids.

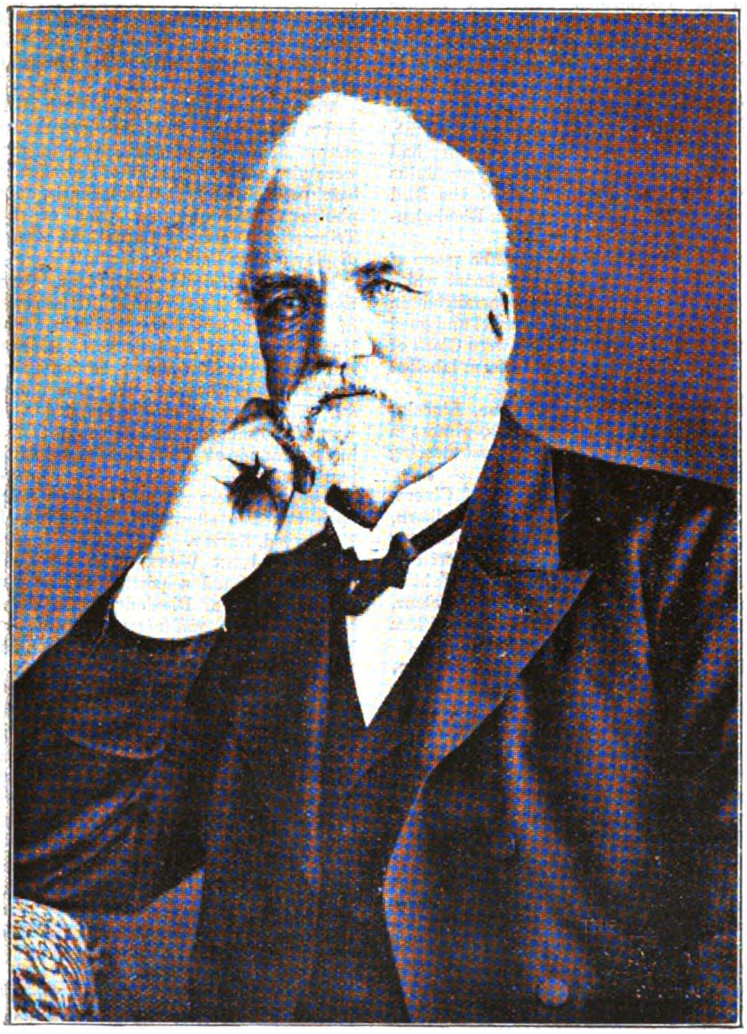
The next Conference will be held at Liverpool on December 28 and 29, 1905.

ENQUIRY.

ANTHURIUM PRÖSCHERSKYANUM!—Will some reader oblige by furnishing information as to the work in which the above-named plant is described? *Berlin.*

Obituary.

ROBERT FEATHERSTONES.—Full of years and honours, this gentleman passed away on the 5th inst., in his 74th year. He had been ailing some two or three years, suffering from heart affection, but only gave up work a few days before his death. He was a man of extraordinary industry, courage, and perseverance, and a man moreover fully determined in all he did to at, least deserve success.



THE LATE CHARLES MOORE,
Formerly Director of the Botanic Gardens, Sydney.

Starting as a private gardener in his native county, York, he found himself as a comparatively young man, some thirty years ago, thrown out of a situation, like many more, through no fault of his own. He decided that a fair prospect for success opened out to him at that time as a florist and floral decorator in the neighbourhood of Leeds. Securing a piece of land about 4 or 5 acres in extent, which at that time was of little value, on the Kirkstall road, about a mile and a half out of Leeds, he was not long in erecting a cottage and four glasshouses. I have often heard him say what a hard struggle he had to keep his head above water for the first few years. But courage, and well-sustained perseverance rarely fails in bringing success, and so with him. The whole of the land has been covered with glass for many years, and the business is now one of the most successful of the kind in the north Midlands.

Few men were better known or more respected in Leeds than the proprietor of St. Anne's Nursery, Kirkstall. His remains were laid to rest with every manifestation of regret and regard by the side of those of his wife in Kirkstall churchyard on the 8th inst. *Correspondent.*

CHARLES MOORE.—It is with great regret that we have to record the death recently of this veteran botanist, in the eighty-sixth year of his age. He was a brother of the late Dr. David Moore, of Glasnevin, and commenced his professional career in Dublin, under Dr. Townsend Mackay in the College Botanical Gardens, about the year 1832. Subsequently he joined his brother, who had been appointed botanist to the Irish Geological Survey Department. On a vacancy taking place in the Botanical Garden at Sydney he was examined by the late Dr. Lindley, and, having passed with honours, was, on his recommendation, appointed Director of the Sydney Botanic Gardens, and later on of the Government Domain and Plantations. Moore was, we believe, the last of the civil servants of New South Wales appointed by the British Government, and he was one of the first officials to be retired under the new regulations as to age. Amongst other good work at Sydney, he laid out the beautiful Victoria Park. The Botanical Gardens at Sydney in Moore's hands soon became noted as being amongst the richest and most beautiful in the world. Moore was not only a strenuous worker of more than ordinary education and ability, but he travelled widely in Australia, and more especially amongst the adjacent islands, whereon he discovered and whence he introduced many new and rare plants, such as Palms, Cycads, and Ferns. He also wrote (date 1893) works on the flora of New South Wales; and more than this, the credit of having introduced the Kentia Palms, or Howeas, from Lord Howe's Island to British gardens, was due to Moore. There are four species growing on this island—viz., at the highest elevation, about 3,000 feet, in misty air and boggy soil, is Howea Moorei; at about 1,500 feet H. canterburyana is found; while the two most useful decorative kinds, H. Fosteriana and H. Belmoreana, grow mixed together near the sea-level. H. Fosteriana is locally known as the Thatch Palm, H. Belmoreana as the Curly Palm, and their seeds are very similar in appearance; but the first-named has four to eight branches to its inflorescence, while the latter has a much longer simple spadix. Other Palms of Australasia are the Areca sapida of New Zealand, A. Baueri of Norfolk Island, while in Australia itself are four distinct species: 1, Seaforthia elegans and its distinct form S. e. Cunninghami; 2, Corypha australis (Cabbage Palm); 3, Calamus australis; and 4, the Queen's Palm, Ptychosperma Alexandræ.

Moore now and then paid visits to England and Ireland, and he accompanied Dr. David Moore to the Florence Exhibition of 1874, or about thirty years ago. His last visit was in 1896, when I met him in the College Gardens at Dublin, and had the above summary of the Palms of Australasia from his own lips, together with interesting reminiscences of British horticulture in the days of Sir Wm. Hooker, Lindley, Paxton, Sir Joseph Hooker, the Balfours, and McNabs of Edinburgh, and many others of that good old school.

Tall in stature, with a commanding but genial manner, Charles Moore was a man to admire and remember. In fact his conversation on matters botanical and horticultural was so full and interesting that one could not but regret that in the course of a long and active life he published comparatively little.

The following are a few only of the rare and beautiful plants with which his name is connected:—Todea Moorei, Fagus Moorei, Alsophila Moorei, Macrozamia Moorei, Kentia Moorei, Rubus Moorei, Villarezia Moorei, &c.

Loved and respected by all who knew him, his memory will long remain green to all who are interested in the botany of Australia. *F. W. B.*

THOMAS SMITH.—We learn with deep regret of the death, on Sunday evening last, at Sibsey, near Boston, of Mr. Thomas Smith, of the firm of Smith Brothers, nurserymen and seedsmen, of Uitenhage and Port Elizabeth, South Africa, in his forty-seventh year. In business circles great sympathy is felt for Mr. Smith's brothers and sisters in this country and in Cape Colony, as only so late as March 26 last another member of the firm, his brother Richard, died at Aliwal North, where he was staying for the benefit of the mineral baths. Both of the deceased brothers were natives of Skirbeck, in Lincolnshire, and went out in the early seventies to Port Elizabeth, where in Nelson Square they started a nursery business. This was attended with so much prosperity that they soon had to seek a wider sphere for their energies, which they found at Uitenhage, where they were joined by their youngest brother, Walter. British all through, kindly natured, energetic and enterprising, they created perhaps the largest business of its kind in South Africa, and gained a worldwide reputation as importers and exporters of British and Cape seeds, bulbs and plants.

PUBLICATIONS RECEIVED.—*Agricultural Gazette of New South Wales*, March. Contents: Barleys at Bathurst Experimental Farm; Bunt Preventives and their Effects upon the Germination of the Grain, R. Peacock; Notes on Forest Conservation; Weeds of New South Wales; Experiments with Potatos &c.—*L'Hybridation des Plantes*, par Raphäel de Noter.

SOCIETIES.

THE ROYAL HORTICULTURAL.

MAY 10.—The capacities of the new Hall in Vincent Square, Westminster, were tried to the uttermost on the occasion of the usual fortnightly meeting on Tuesday last. All the space available for exhibits was well filled, and the brightness so characteristic of spring-flowering plants was observable in every part of the building.

The ORCHID COMMITTEE recommended two Botanical Certificates, two First-class Certificates, and six Awards of Merit to novelties, and there were several unusually good groups of Orchids exhibited.

The FLORAL COMMITTEE recommended one First-class Certificate and nine Awards of Merit to novelties, among which several were new plants of much value introduced by Messrs. JAMES VEITCH & SONS from China. A large number of Medals was awarded in respect to groups.

The FRUIT AND VEGETABLE COMMITTEE recommended an Award of Merit for Rhubarb "Hobday's Giant," and there were several other exhibits of fruit and vegetables.

The NARCISSUS AND TULIP COMMITTEE was concerned chiefly with the consideration of varieties of Tulips, of which there were numerous exhibits.

In the afternoon a considerable number of new Fellows were elected, and papers on "Japanese Gardening" were read by Mr. N. Hayashi and Mr. R. J. Farrer.

Floral Committee.

Present: W. Marshall, Esq. (Chairman); and Messrs. R. Dean, Jno. Green, Geo. Nicholson, J. W. Barr, Geo. Paul, W. J. James, E. H. Jenkins, W. P. Thomson, Chas. E. Shea, H. J. Cutbush, Chas. Dixon, Chas. Jefferies, W. Bain, H. J. Jones, C. R. Fielder, R. Hooper Pearson, J. F. McLeod, Geo. Gordon, Chas. T. Druery, W. Howe, and R. C. Notcutt.

On the motion of Mr. E. H. Jenkins, a vote of congratulation to Mr. R. Dean was passed on his attendance again after a long absence caused by illness.

Messrs. W. BULL & SONS, King's Road, Chelsea, exhibited a new Dracæna with leaves about 1½ foot long and 6 inches wide, mottled with green and yellow. The plant is described as coming from Borneo, and will probably make a first-class foliage plant for cultivation in the stove. The Committee requested that the plant be exhibited again when it has made further growth. Messrs. WM. BULL & SONS also presented a number of ornamental foliage, stove and greenhouse plants, Caladiums, Codiæums (Crotons), Talisia princeps, Browneas, Cupania, &c. Blandfordia aurea and B. nobilis were shown in flower.

Messrs. R. VEITCH & SON, Exeter, among other interesting specimens, showed flowering sprays of Sophora tetraptera [see fig. in *Gardeners' Chronicle*, June 8, 1878, p. 729], and very large flowers of a brilliant crimson-coloured Poppy having no black markings, under the name of Papaver "Devonia"; also a plant of Campanula under the name of C. phyctidocalyx. The inflorescence was nearly 2 feet high, and the flowers of deep blue colour, resembling those of C. persicifolia, but the leaves were quite different, being only 1½ inch long.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. Bain), exhibited a form of Rehmannia angulata with leaves slightly different from those of the type, and with larger, more maculated flowers. Also a small plant in pot of Philadelphus Lemoinei "Roseace," a variety in which the flower-buds before expanding have an appearance exactly similar to that of Rosebuds. Deutzia myriantha Lemoinei was shown from the same garden.

Mr. CHAS. TURNER, Royal Nurseries, Slough, exhibited a collection of alpine Auriculas, also a fine group of varieties of Primula Sieboldi, the plants being arranged in about one dozen baskets (Bronze Flora Medal).

Messrs. FRANK CANT & CO., Braiswick Nurseries, Colchester, exhibited a collection of cut Roses, showing the variety Maréchal Niel very prominently, also Mrs. W. J. Grant, W. A. Richardson, Lady Roberts, and many other varieties.

Messrs. JAS. VEITCH & SONS, Ltd., King's Road, Chelsea, brought many new and interesting plants. Meconopsis integrifolia was again a source of much attraction. Near by was M. punicea, whose flower was not inaptly likened to that of a Sarracenia (see Awards). Both these have been recently figured in the *Gardeners' Chronicle*. Clematis montana var. rubens is another notable acquisition. This plant and two new Primulas, P. Veitchii and P. japonica var. pulverulenta, also received awards. Hydrangeas with blue flowers contrasted greatly with others of rose colour; the blue in some plants was very pronounced. Senecios, Cinerarias, and dwarf, well-flowered plants in pots of Cerasus pseudo-Cerasus "James H. Veitch" also found a place in this exhibit (Silver Flora Medal).

W. M. CASZALET, Esq. (gr., Mr. Cubberley), Fairlawn, Shipbourne, Tonbridge, set up a magnificent batch of Schizanthus Wisetonensis, the plants being covered with flowers, and with the addition of a number of Ferns, Palms, and similar plants constituted a group that was greatly admired (Silver-gilt Flora Medal).

Mr. W. A. WATTS, Bronwylfa, St. Asaph, brought a good strain of Polyanthus Primroses (Bronze Banksian Medal).

Messrs. DOBBIE & CO., Rothesay, again showed a collection of Pansies and Violas of similar varieties to those shown in their exhibits at the last two meetings of the Society (Silver Banksian Medal).

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, made a feature of Lobelia nicotianæfolia, but they had also sprays of flowering trees and shrubs, Pyrus Malus in several named kinds, a double form of the Bird Cherry, Syringa pubescens, and a new pink Rhododendron named H. M. Arderne.

Messrs. SUTTON & SONS, Reading, showed a group of Wallflowers. The colours ranged from almost white to dark blood-red. The varieties were arranged in semi-circular bands, giving the group a novel and good appearance. Some of the best varieties were Cloth of Gold (yellow), Blood Red, and a magenta form labelled Purple Queen (Silver Banksian Medal).

Messrs. GILBERT & SONS, Dyke, Bourne, Lincolnshire, presented a collection of Anemones, almost a replica of the group shown by them at the last meeting (Silver Banksian Medal).

A whole table was occupied by a display of Cinerarias set up by Messrs. CARTER & CO., High Holborn, London. The plants were nearly all of the ordinary florist's type, but a raised centre was composed of plants of the stellata kind. This extensive exhibit was much admired, and presented a wealth of colour, relieved at intervals with small Palms (Silver Flora Medal).

Messrs. J. LAING & SONS, Forest Hill, London, staged a group of Caladiums, interspersed by a number of Palms and Ferns.

Mr. H. B. MAY, Dysons Lane Nurseries, Upper Edmonton, had a collection of zonal Pelargoniums. The plants were flowering freely, and were shown with a groundwork of small Ferns interspersed with Palms. Lord Aberdeen (scarlet), Mme. Roseleur (rosy pink), and Gabriel Monod (magenta) are varieties worthy of mention.

Messrs. THOS. CRIPPS & SON, Tunbridge Wells Nurseries, Kent, showed a handsome group of Japanese Maples, also Hydrangea Hortensia, and smaller Maples in 48 pots. The foliage was well coloured, and the varieties included many of the best types of these handsome foliage plants.

Messrs. FELTON & SONS, florists, Hanover Square, showed a number of decorative plants, "Malmaison" Carnations, pot Roses, Spiræas (Astilbe), &c. A specimen of Metrosideros floribunda exhibited in flower was a good specimen of this interesting Australian plant.

Mr. A. F. DUTTON, Iver, Bucks, showed two vases of Carnations, one containing the variety Fair Maid, with flowers of a soft blush-pink: also a white variety named Lady Bountiful (see Awards).

Messrs. W. & J. BROWN, Stamford, showed plants and cut flowers of "Cactus-flowering" Pelargoniums, Dimorphotheca Eckloni, Verbena Miss Willmott, and pot plants of the climbing polyantha Rose "Miss Dorothy Perkins."

Mr. GEO. MOUNT, Canterbury, put up a splendid stand of Roses, having a background of dwarf plants of the variety Crimson Rambler that were literally crowded with flowers. The variety Liberty was superb, and we doubt if Mrs. John Laing and Caroline Testout could be produced in better condition than that in which they were exhibited. The exhibit was excellent (Silver Banksian Medal).

Messrs. BEN. CANT & SONS, Old Rose Gardens, Colchester, also showed some commendable cut Roses, backed by pots plants of Blush Rambler and similar varieties (Bronze Flora Medal).

Messrs. WM. PAUL & SON, Waltham Cross, showed Roses in pots. A very fine new hybrid rambling Rose named "Waltham Bride" has large white semi-double flowers, that are produced in lax clusters, and are admirably set off by their yellow centre of stamens. A magenta form of Crimson Rambler, and other good varieties were included.

Messrs. CANNELL & SONS, Swanley, Kent, brought half-a-dozen plants of Rose "Dorothy Perkins," that were perfect specimens, and almost hidden with their bunches of flowers. A row of Myosotis "Star of Love" was placed in front of the Roses. In addition Messrs. Cannell contributed an extensive collection of zonal and show Pelargoniums, such as they have displayed at the last few meetings of the Society, and which would be more pleasing if green foliage plants were more freely intermixed with the over-brilliant colours (Silver-gilt Banksian Medal).

Mr. E. POTTEN, Camden Nursery, Cranbrook, Kent, showed plants of Rose "Philadelphia Rambler," a variety with larger and deeper-coloured flowers than Crimson Rambler, although it does not appear to be quite so free flowering as the latter. Mr. Potten also showed a good form of Trollius europæus (Bronze Flora Medal).

Messrs. HUGH LOW & CO., Bush Hill Park, Enfield, had a number of interesting greenhouse plants. Chorizema ilicifolium was presented in good form; there were also a fine specimen of Clerodendron Balfouri, a batch of Schizanthus Wisetonensis, another of Dimorphotheca Eckloni, and pans of Lobelia "Low's Triumph." Vases of Carnations, &c., completed the display (Silver Banksian Medal).

Mr. GILL, Tremough Gardens, Penryn, Cornwall, brought from that favoured district some inflorescences of Rhododendrons from the open. There were excellent "heads" of R. Falconeri, R. campylocarpum—resembling the former, but having pale yellow flowers instead of buff-cream — R. glaucum, R. Aucklandi, &c. The same grower displayed a branch of the beautiful Embothrium coccineum, from a tree growing in the grounds at Tremough, and a spray of Clianthus puniceus.

A box of flowers of Rhododendron Falconeri from the open was also shown by E. HEATH, Esq., Kitlands, Holmwood, Surrey.

Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey, furnished a portion of the concert platform with a display of Rhododendrons, edged by a row of Ledum palustre, and intermixed with Japanese Maples. Pink Pearl was prominent in the centre of the group, having a batch of the variety Cynthia on either side. There were also William Austin (a fine dark crimson) and John Henry Agnew (a light-coloured variety with darker upper petal) (Silver Banksian Medal).

The remaining space on the platform was occupied by a group of dwarf Japanese trees in pots, staged by Messrs. BARR & SONS, King Street, Covent Garden.

Messrs. J. CHEAL & SONS, Crawley, showed a number of sprays of flowering trees and shrubs, relieved with branches of ornamental foliage. Magnolia Lennei was conspicuous, Exorchorda grandiflora was very showy, as were the flowering Cherries, Crabs, &c. Messrs. CHEAL also showed trays containing "alpines" and a basket of their new Pansy "Mark Mills" (Bronze Flora Medal).

Mr. L. R. RUSSELL, Richmond Nurseries, Richmond, Surrey, put up a showy group of flowering plants—Clematis, Azaleas, Ixora superba, Olearia stellulata, Philadelphus, &c. The display presented a wealth of colour, and was nicely finished by an edging of the small variegated Funkia (Silver Banksian Medal).

Messrs. R. & G. CUTHBERT, Highgate, showed a large group of forced shrubs and other plants arranged in good style (Silver-gilt Banksian Medal).

Mr. JAS. DOUGLAS, Edenside, Great Bookham, contributed a number of Auriculas, two of which are mentioned under Awards (Silver Banksian Medal).

A collection of "Alpines" was shown by the GUILDFORD HARDY PLANT NURSERY CO., Millmead, Guildford. Androsace coronopifolia was shown well. We also noticed Daphne Fioniana and Haberlea rhodopensis. Saxifrages were a feature in this firm's exhibit (Silver Banksian Medal).

Mr. AMOS PERRY, Winchmore Hill, London, showed an extensive group of Alpine plants. A batch of Phlox canadensis Perry's variety was prominent; it is an advance on the type. Irises were shown well. We also noticed Euphorbia Wulfeni (see Awards), Convolvulus Cneorum, and a large tank of the fragrant Cape pond weed, Aponogeton distachyon (Silver Banksian Medal).

Messrs. WM. CUTBUSH & SON, Highgate, London, N., staged an extensive group of alpine plants, displayed, as usual, to the best advantage. Prominent among the group were a number of hardy terrestrial Orchids, a batch of Cypripedium spectabile being a feature. We also noticed C. japonicum in flower. Other interesting plants were Eritrichium nanum, Daphne Gwenka, and Anemone magellanica. On another table Messrs. CUTBUSH displayed Ericas and a dwarf growing polyantha Rose named Mrs. W. Cutbush (Silver-gilt Banksian Medal).

Mr. M. PRICHARD, Christchurch, Hants, exhibited hardy plants—Phloxes, Irises, Aubrietias, Alyssums, Primulas, many forms of Scilla nutans, and S. campanulata. Interesting were Myosotidium nobile, that had the appearance of a huge Forget-me-Not, and our own beautiful bog-plant, Menyanthes trifoliata (Silver Flora Medal).

Mr. G. REUTHE, Keston, Kent, put up a collection of alpines and similar plants, among which were not a few novelties, especially of Irises; we noticed the new I. vaga and I. Hebe, a lot of I. Susiana, Tulips, a few Daffodils, hardy Orchids, Rhododendrons, Primulas, &c. (Bronze Flora Medal).

Messrs. GEO. JACKMAN & SON, Woking Nursery, Surrey, showed alpine and border plants. We have space only to mention Cypripedium pubescens, Ranunculus monspeliacus, Iris sofrana var. magnifica, and Edrianthus serpyllifolius. A large collection of Trollius was included in the group.

The Misses HOPKINS, Mere, Knutsford, showed a small collection of alpine plants.

Messrs. GEO. BUNYARD & Co., Maidstone, showed a collection of alpine hardy plants. There were good forms of Primula Sieboldi, Aubrietias, Saxifrages, Trollius napellifolius, Iris grandiflora, Tulips, &c. (Bronze Flora Medal).

Messrs. PULHAM & SON, 71, Newman Street, Oxford Street, London, set up a fine piece of rockwork, on which they arranged a number of well-flowered alpine plants, Ferns, &c. One portion of the structure representing a cave was well executed.

Messrs. T. S. WARE, Ltd., Ware's Nursery, Feltham, showed a number of their new "Tree" Carnation Leander, a variety having salmon-pink-coloured flowers, and from the number of buds present of very free-flowering habit. They also displayed a fine collection of alpine and hardy plants. Chamælirium Carolinianum was flowering in a pan, also Wulfenia carinthiaca, Aubrietias, Irises, Primula japonica in varieties, and Lobelia laxiflora were shown well. There were also flowers of tuberous Begonias in single and double varieties (Silver Flora Medal).

Messrs. JOHN PEED & SON, West Norwood, London, showed a nice display of Gloxinias. The specimens were well grown, the type of flower being commendable in size, colour, and form. Messrs. PEED also displayed a group of Japanese Maples and Clematis montana (Silver Banksian Medal).

Awards.

Auricula Vesta.—This is a very pretty white-edged variety, shown by Mr. JAS. DOUGLAS (Award of Merit).

Auricula Rifleman.—A green-edged variety of considerable refinement. From Mr. JAMES DOUGLAS (Award of Merit).

Carnation "Lady Bountiful."—A tree variety with pure white fragrant flowers of large size and possessing non-splitting calyces. Like most of the American varieties the flowers of this one have petals with marginal fimbriation. Shown by Mr. A. F. DUTTON (Award of Merit).

Clematis montana rubens.—A variety in which the flowers are pinkish or rose in colour. Shown by Messrs. JAS. VEITCH & SONS (Award of Merit).

Euphorbia Wulfeni.—A strong-growing plant, having linnear oblong leaves and very large inflorescences of greenish-yellow coloured bracts. A suitable plant for cultivation on a boldly-constructed rockery. Shown by Mr. A. PERRY (Award of Merit).

Meconopsis punicea.—This species, like M. integrifolia, which received a First-class Certificate at the previous meeting, is an excellent hardy-flowering plant recently introduced from China. We published a large illustration of the plant in our issue for Oct. 22, 1904, p. 289, when it was fully described. The plant as shown on Tuesday last had a flower-spike about 20 inches high, and its large, rich, red-coloured, drooping flowers, which are produced solitary, are certainly very handsome. From Messrs. JAS. VEITCH & SONS (First-class Certificate).

Primula japonica var. pulverulenta.—A variety of P. japonica with exceedingly rich purple-rose-coloured flowers, and having the inflorescence covered with a whitish powder. From Messrs. JAS. VEITCH & SONS (Award of Merit).

Primula tangutica.—A curious species with brightly coloured, blackish-purple flowers with very narrow petals, to which we shall refer again. Shown by Messrs. JAS. VEITCH & SONS (Botanical Certificate).

Primula Veitchii.—This is a new and hitherto unpublished species introduced from China. It has some resemblance to P. cortusoides, but is very distinct, and it will make a first-class garden plant. The flower-spike is about 14 inches high, and some of them bear as many as twenty flowers of rosy-purple or violet colour. The flowers themselves might be described as having an appearance similar to those of a very richly-coloured variety of P. obconica. We hope to publish a full description of the plant shortly. From Messrs. JAMES VEITCH & SONS (Award of Merit).

Pteris cretica generosa.—This is an elegant plant shown by Mr. H. B. MAY, Edmonton. It reminds one of the variety Summersii partly skeletonised, for instead of being unusually plumose, in the variety generosa the fronds have little beside the vascular tissue developed. To this characteristic its light appearance and elegance are due (Award of Merit).

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the Chair; and Messrs. Jas. O'Brien (Hon. Secretary), De B. Crawshay, W. A. Bilney, J. Douglas, J. Colman, F. Wellesley, W. H. White, H. T. Pitt, F. Sander, H. G. Morris, F. W. Ashton, H. A. Tracy, G. F. Moore, R. G. Thwaites, H. Ballantine, T. W. Bond, J. W. Potter, W. H. Young, W. Boxall, W. Bolton, W. Cobb, H. Little, and H. J. Veitch.

Among amateurs, F. MENTEITH OGILVIE, Esq., The Shrubbery, Oxford (gr., Mr. Balmforth), secured the highest award, a Silver-gilt Medal, for a very beautiful and well-arranged group, in the centre of which was a cluster of plants of finely flowered Oncidium concolor. Arranged around and beside were many good forms of Odontoglossum crispum, O. × Adrianæ, and other Odontoglossums; and arching over from the back fine sprays of Cymbidium Lowianum and its variety concolor; C. × eburneo-Lowianum, Lælia cinnabarina with five spikes, Odontoglossum triumphans, &c. At the extreme end was a grand specimen of Cypripedium Rothschildianum, with fourteen flowers; Cattleya intermedia alba, with sixteen pure white blooms; a fine specimen of Cypripedium Lawrenceanum Hyeanum, three of C. callosum Sanderæ and C. × Maudiæ, a nice example of the pretty white purple-spotted C. × Mrs. Herbert Druce, good Lycaste Skinneri, Miltonia × Bleuana, a patch of scarlet Sophronitis, &c.

Baron Sir H. SCHRÖDER, The Dell, Egham (gr., Mr. Ballantine), was awarded a Silver Flora Medal for a fine group containing several very handsome blotched forms of Odontoglossum crispum, the best being O. c. Rex (a very finely-coloured flower), O. c. Lindeni, and O. c. Princess Beatrice. These had already had awards, and so also has the handsome O. × Harryano-crispum Duchess of York. Specially fine were Cattleya Skinneri, with nine heads of bloom; Odontoglossum × Wattianum, O. Oerstedi, with twenty-three pretty white flowers; Brasso-Cattleya × Digbyano-Mossiæ, the original plant; Cypripedium Mastersianum, C. × Maudiæ, C. Lawrenceanum, with six flowers, and a strong plant of its variety Hyeanum; the singular Bulbophyllum barbigerum and B. Dearei; Masdevallia cucullata, Renanthera Imschootiana, and other rare kinds.

Sir TREVOR LAWRENCE, Bart., Burford (gr., Mr. W. H. White), was awarded a Silver Flora Medal for an interesting group of fine Orchids, for several of which see Awards. One of the finest in the group was Cattleya Mossiæ Goossensiana, with pearly-white sepals and petals and very rich violet-purple lip. Others shown were the singular Epi-Lælia × radico-purpurata, Brasso-Cattleya × striata, Lælio-Cattleya × Fascinator splendens, quite a bush of the pretty orange-coloured Dendrobium Jerdonianum, and the slender white D. crumenatum, Masdevallia × Rushtoni, M. × Ferrieresensis, M. × Doris, and other hybrid Masdevallias, and the pretty Cattleya intermedia Aquini.

H. S. GOODSON, Esq., Fairlawn, Putney (gr., Mr. G. E. Day), received a Silver Flora Medal for an effective group in which were a good selection of forms of Odontoglossum crispum and other Odontoglossums; a fine example of Dendrobium Bensonæ, others of D. thyrsiflorum, and D. Devonianum; a fine specimen of Angræcum sesquipedale, good Cattleya Schröderæ, and C. Mendeli, C. intermedia alba, Dendrobium atroviolaceum, Cymbidium Lowianum, Phaius × Norman, the handsome Miltonia × Bleuana radiata, and other showy Orchids.

Messrs. J. CYPHER & SON, Exotic Nurseries, Cheltenham, secured a Silver-gilt Flora Medal for a fine and tastefully arranged group, the forms of Odontoglossum crispum being prominent. The finest was O. crispum giganteum, a noble white flower tinted on the sepals with rose colour. It is fine in shape and size, and very delicately tinted. Good forms of O. Pescatorei (a pretty white-ground), O. × loochristyense Empress Frederick, and some other hybrids were also included, and good examples of Phalænopsis Rimestadtiana, scarlet Masdevallias, Lælio-Cattleya × Hippolyta, L.-C. × highburyensis, Diacrium bicornutum (with two fine spikes), Oncidium cornigerum, Calanthe veratrifolia, Odontoglossum Uro-Skinneri, &c. The Cattleyas included good C. Mendeli (one with a very large delicately-veined rosy magenta labellum), and the white C. M. Duchess of York being specially remarkable; good C. Schröderæ, C. Skinneri, C. Aclandiæ, pretty tufts of Tetramicra bicolor, &c.

Messrs. CHARLESWORTH & Co, Heaton, Bradford, secured a Silver Flora Medal for an excellent group, in the centre of which was a selection of the reddish-orange-coloured Lælio-Cattleya × G. S. Ball, and beside them several L.-C. × Myra, L.-C. × Mercia, L.-C. × Hyeana, and other Lælio-Cattleyas. The Odontoglossums were represented by good forms of O. crispum, the spotted ones including O. c. Luna (clear white with brownish spots). Others noted were several pretty unnamed hybrids; a good form of O. × excellens (home-raised), O. × Brandtiæ, O. × loochrisytense (of fine form, yellow blotched with chocolate-brown), the orange-coloured Saccolabium curvifolium, Brasso-Cattleya × Digbyano-Mossiæ, and a strong specimen of Cypripedium × Edithæ (bellatulum × Chamberlainianum).

Messrs. HUGH LOW & Co., Enfield, staged a group, including Trichopilia suavis and its white variety, Saccolabium ampullaceum, a very fine Dendrobium clavatum, Cattleya Lawrenceana, C. intermedia, C. i. alba and cœrulea, Pholidota ventricosa, Chysis bractescens, various Odontoglossums, &c. (Silver Banksian Medal).

C. J. LUCAS, Esq., Warnham Court (gr., Mr. Duncan), staged a group of Odontoglossums comprising two very fine forms of O. polyxanthum, O. × Andersonianum obstupefaciens, O. Hallii, O. × Adrianæ, O. triumphans, and with them a good plant of Cattleya × Apollo (Aclandiæ × Mossiæ) (Silver Banksian Medal).

M. CHAS. VUYLSTEKE, Loochristy, Ghent, showed the fine Odontoglossum × Rolfeæ "Palma," and several other hybrid Odontoglossums.

FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins), again showed the handsome yellow, purple-spotted Cypripedium × Wellesleyanum, which had previously secured an Award, and also C. Lawrenceanum hackbridgense.

G. H. ROLLS, Esq., Arcadia, Bournemouth, showed a fine form of Cattleya Mossiæ.

DE B. CRAWSHAY, Esq., Rosefield, Sevenoaks (gr., Mr. Stables), showed Odontoglossum crispum Bonnyanum Crawshayanum (!), a very fine flower and remarkable in that the splendid plant had been grown in a clear glass pot; also O. × Andersonianum "Raymond Crawshay," and O. Lindleyanum aureum, the last named, a clear yellow unblotched variety, securing a Botanical Certificate.

W. C. WALKER, Esq., Winchmore Hill (gr., Mr. Bunney), showed Odontoglossum × Adrianæ "Avico Walker."

Mr. H. WHATELEY, Kenilworth (gr., Mr. J. Howes), sent three good spotted Odontoglossums—viz., O. crispum "Hubert Whateley," O. c. "Eric Whateley," and O. × Andersonianum Whateley's variety.

FRAU IDA BRANDT, Riesbach, Zurich, sent a fine flower of the extraordinarily large Angræcum infundibulare, illustrated in the *Gardeners' Chronicle* [see Supplement, August 20, 1904], and for which Lord ROTHSCHILD had received a First-class Certificate at the first meeting in the new Hall (Vote of Thanks).

JEREMIAH COLMAN, Esq., Gatton Park (gr., Mr. W. P. Bound), showed a remarkable cross between Diacrium bicornutum and Epidendrum radicans, bearing a terminal head of reddish-scarlet flowers. The habit is like that of a stout dwarf E. radicans.

Messrs. COWAN & Co., Gateacre, Liverpool, showed a fine specimen of Cypripedium aureum virginale with six flowers.

Awards.

First-class Certificates.

Odontoglossum crispum "Louis L. Sander," from J. Leemann, Esq., West Bank House, Heaton Mersey (gr., Mr. Edge).—One of the finest of the prized blotched forms of O. crispum, and although still only a small plant showing qualities of the highest order. The backs of the segments are of a rich rose-purple colour. Two-thirds of the surface are covered with fine purplish-crimson blotches, the main blotches following the outline of the flower up to the clear white margin. Lip white, with several reddish blotches. A remarkably beautiful variety.

Cymbidium rhodocheilum, from J. Bradshaw, Esq., Southgate (gr., Mr. Whitelegge).—This is a fine Madagascan species now also flowering at Kew. The plant bore a strong inflorescence; sepals green; lip, magenta-rose with dark spots at the base.

Awards of Merit.

Brasso-Cattleya × *Mrs. J. Leemann* (B. Digbyana × C. Dowiana aurea) from Sir Trevor Lawrence, Bart. —Flowers, yellow, slightly tinged with green and pale rose-colour; lip fringed.

Bulbophyllum Reinwardtii, from Sir Trevor Lawrence, Bart.—Similar in habit to B. Ericsoni. Inflorescence bearing one large flower; sepals and petals green, striped and spotted dark-purple; lip hinged, crimson-purple on the upper surface.

Epi-Lælia × *Sylvia* (L. cinnabarina × E. Cooperianum), from Sir Trevor Lawrence, Bart.—A graceful hybrid, with an arching inflorescence of a dozen pretty white flowers tinged with salmon-red.

Lælio-Cattleya × *G. S. Ball "magnifica"* (L. cinnabarina × C. Schröderæ), from Sir Trevor Lawrence, Bart.—A very handsome variety, with uniformly-coloured bright orange flowers.

Odontoglossum crispum "Titus," from J. Leemann, Esq., Heaton Mersey.—Flowers white, effectively blotched with chocolate-purple colour.

Odontoglossum crispum aureum West Bank House variety, from J. Leemann, Esq.—Flowers clear canary-yellow colour.

Botanical Certificate.

Dendrobium crumenatum, from Sir Trevor Lawrence.—Pseudo-bulbs continued into slender stems bearing numerous white flowers with yellow disc to the lip.

Odontoglossum Lindleyanum aurcum, from De B. Crawshay, Esq.—Flowers wholly yellow.

Narcissus and Tulip Committee.

Present: Mr. H. B. May (Chairman); J. R. De C. Boscawen, J. T. Bennett-Poë, W. Poupart, J. D. Pearson, Rev. G. H. Engleheart, E. H. Bowles, G. Reuthe, E. Willmott, Jas. Walker, R. Sydenham, S. Eugene Bourne, Walter T. Ware, R. W. Wallace, A. Kingsmill, and C. H. Curtis.

Messrs. Wallace & Co., Colchester, in addition to many early kinds, exhibited a very remarkable collection of Darwin Tulips. We noted Inglescombe Pink, Flame, Mrs. Moon, Orange King, Jaune d'Œuf, Inglescombe Scarlet, Clara Butt, King Harold (the two last-named secured awards), Rose Queen, Margaret, Negro, &c. Many species were included in the exhibit (Silver-gilt Banksian Medal).

A very nice collection of Tulips was exhibited by Messrs. Veitch & Son, Ltd., Chelsea, representative principally of the May-flowering, bedding, and Darwin kinds (Silver Flora Medal).

Messrs. Barr & Sons, King Street, Covent Garden, contributed some very imposing flowers, the Cottage Tulips and the Darwins being in a majority. We noted Empress of China (bronzy-yellow), Courante fulgens (a painted flower), the rich colour of Bouton d'Or, with Mrs. Moon (a yellow and painted Cottage kind). The Darwin section was well represented, and commanded attention. The curiously coloured T. viridiflora præcox was also interesting (Silver Flora Medal).

The exhibit from Messrs. Walter Ware, Ltd., Bath, contained many fine varieties of Tulips, the fully-formed flowers being especially good. The variety Clara Butt (see Awards) was very imposing. Other good varieties were Gertrude (Cottage), White Queen, Inglescombe Pink and Painted Lady.

Messrs. Hogg & Robertson, Dublin, contributed Narcissi as well as Tulips, and of the former we noted Maggie May (still very good), Glory (a fine poeticus), White Lady (Leedsii) and Mrs. Betteridge.

Messrs. Dobbie & Co., Rothesay, brought a varied collection of cut Tulips, chiefly of the bedding sorts, and in which double and single varieties were almost equally balanced.

Messrs. R. H. Bath & Co., Wisbech, contributed a collection of Tulips, chiefly of the Darwin section, and including Madame Krelage, La Noire, Pride of Haarlem, Europe, Ant. Roozen, Maiden's Blush, and others (Silver Flora Medal).

Miss Willmott, Warley Place, Essex, exhibited a group of her choicest novelties in Daffodils. None of the varieties was named on this occasion. The collection was not only representative, but the flowers were in excellent condition.

Awards.

Tulip Clara Butt (*Darwin*).—A variety of the highest refinement in beauty and colouring. The predominating colour is a mixture of rose-and-salmon, and may not easily be described. The flower attracts one's attention immediately it is seen. From Messrs. Walter T. Ware, Ltd., Bath; and Messrs. R. W. Wallace & Co., Colchester (First-class Certificate).

Tulip Ariadne (*Darwin*).—A very handsomely proportioned flower, crimson or ruby-crimson in colour. From Messrs, Barr & Sons, Covent Garden (Award of Merit).

Tulip Claude Guillot (*Darwin*).—A very shapely flower, and coloured crimson, with clearly coloured base having internally a well-defined white border (Award of Merit).

Tulip Orange Beauty (*Breeder*).—A fine and showy variety, orange or orange-scarlet in colour, painted with gold. A fine Tulip for massing in beds. The last two varieties were exhibited by Messrs. Walter T. Ware, Ltd., Bath (Award of Merit).

Tulip King Harold (*Darwin*).—A massive, well-proportioned flower, supported on a tall stem, the colour being a glowing shade of ruby-red or crimson. The interior of the base is dark-coloured. A noble self-coloured Tulip of great merit. From Messrs. R. W. Wallace & Co., Colchester (Award of Merit).

Fruit Committee.

Messrs. Jas. Veitch & Co., Ltd., King's Road, Chelsea, staged a collection of Apples and Pears in forty-seven baskets. Taken collectively, the fruits were very meritorious, especially when the lateness of the season is considered. The finest examples were Smart's Prince Arthur, Winter Peach (an exceptionally handsome exhibit), Northern Greening, Barnack Beauty, Norfolk Beeefing, Norfolk Bearer (a good-looking variety), and Duke of Beaufort. A few Pears were included in the display, Directeur Alphand being prominent (Silver Banksian Medal).

Mr. S. Mortimer, Farnham, Surrey, showed six fruits of his new Cucumber, Aristocrat. They were dark in colour and about 14 inches in length. An Award of Merit had been previously granted.

Messrs. Geo. Bunyard & Co., Maidstone, showed fourteen dishes of Apples of varieties now in season. Although the late period for English-grown Apples was apparent in the specimens shown, they were nevertheless instructive, and exemplified what kinds are available for use now. The best dishes were those of the varieties Calville Rouge, Winter Peach, Alfriston, Tibbett's Pearmain (good examples), Striped Beefing, and Annie Elizabeth.

Mr. T. Grandfield, The Gardens, Hayes Place, Hayes, showed six good fruits of Hero of Lockinge Melons (Cultural Commendation).

Mr. T. Chamberlain, gr. to S. Heilbut, Esq., Holyport, showed twelve heads of "Sutton's Golden Ball" Lettuce. They looked very appetising, and were worthy of the Cultural Commendation awarded them.

Messrs. Cannell & Sons, Swanley, Kent, had a row of King Edward VII. Peas in what resembled a large window-box, and the growths were trained several feet high. The numerous pods were fully developed, although the seeds were sown as recently as March 4, 1905. Excellent Cabbages and Broccoli were also shown (Cultural Commendation).

Awards.

Award of Merit.

Rhubarb Hobday's Giant.—This variety is well named, the petiole being almost 4 feet in length. The exterior has a beautiful rose colour, but the leaves shown gave evidences of having been protected from the light, and were thus somewhat "drawn." One "stick" would be sufficient for an ordinary dish of pastry.

The Lectures.

At a meeting held in the afternoon, H. J. Veitch, Esq., in the Chair, about seventy new Fellows were proposed and elected.

The lecture-room was crowded, the speakers were clear and interesting, and the lantern illustrations excellent. Two papers on "Japanese Horticulture" were read. The first of these, read by the Assistant Secretary, was from a Japanese point of view, and had been written by Mr. N. Hayashi, and was illustrated by some fine photographs and pictures. The lecturer pointed out that although his nation was one of the oldest now in existence, 2566 years having passed since the first Emperor's ascent to the throne, the fact of her complete isolation from the Western World had prevented her people from profiting by the advance in Western civilisation, and thus they had been compelled to look to China as their teacher and to Chinese civilisation as their model, until the reformation and subsequent opening of the country to Western influences and civilisation some fifty years ago. Horticulture also had been developed on Chinese principles and was bound by Chinese conventional rules, but as horticultural progress depended largely on the tranquillity of the country it was not until Shogun Tokugawa, the great feudal ruler, had brought about peace by the formation of a powerful government in A.D. 1595, that the art made any marked development. For the next 200 years soldiers and commoners alike paid very great attention to horticulture, and even at the present time the Tokigawa dynasty is still regarded as the golden age of Japanese horticulture. Then, too, the revolution, or more strictly speaking, the reformation of forty years ago aimed at effecting a complete change in the things which had appeared to the leaders thereof to be impediments in securing the advantages of Western civilisation. Thus the beautiful gardens attached to the town houses of feudal lords in Yedo (now Tokyo), the then capital of the defeated Shogun, were remorselessly destroyed; trees and shrubs were cut down and converted into fuel for the popular furnace, and ornamental stones were dug up to pave the streets. Thus horticulture had for a while been entirely suppressed. Immediately after the civil war, which fortunately was soon over, Japan started a new life, and the whole nation devoted itself to making the country "the equal in civilisation and in powers of defence and offence of any European nation"; and education, law-making, and many other matters also occupied its attention. Consequently, though the cultivation of utilitarian fruits and vegetables has been more or less encouraged by the Government, the cultivation of garden plants and flowers had not occupied the people's attention so much of late years as formerly. "Moreover only a few years after the last Chino-Japanese war they had been again called upon to fight for their national existence, as well as for securing permanent peace in the Far East; but he (Mr. Hayashi) sincerely hoped that the conclusion of this terrible war would bring the much-desired peace in the East, in which case horticulture would not be slow in reaping the fruits of such a millennium." He then described the work of the Japanese agricultural, horticultural, and special flower (such as the Chrysanthemum, Rose, and Primula) societies and of the Fruit, Dwarf Trees, and other societies. He gave a short account of the vegetables of Japan, The fruits of Japan were generally eaten raw, and never appeared on the table with meals. Few kinds were dried and crystallised for use, and jam-making was quite a recent thing learnt from abroad.

The cultivation of the Chrysanthemum was also described. This flower was first cultivated in Japan in about A.D. 300, and reached its zenith in the sixteenth century. The lecturer had himself investigated the origin of the Japanese Chrysanthemum, and had found that similar kinds to the present varieties of flower could be obtained by various processes of hybridisation, and he mentioned what he believed to be the parent varieties, and described the principal varieties now cultivated. The methods of both the Japanese amateur and professional Chrysanthemum cultivators were also described in the paper.

The second paper was by Mr. Reginald Farrer, on "Japanese Horticulture," with special reference to Japanese soil and weather. He pointed out that all apanese plants grew with more or less bottom-heat, an that their soil is generally of rich, warm loam, mixed in different degrees with minute volcanic deposits. As to climate, they endured intense extremes of heat and cold at least in Hon do and Hohkaido), both accompanied by almost perpetual rain, October and December being the only two months in which any clear spell of fine weather could be confidently expected. In these circumstances it could not be wondered at that Japanese gardening should differ so much from English gardening. But in fact it was fair to say that the Japanese are not so much lovers of flower gardens as of garden architecture in stone and topiary work. As to wild flowers, Japan contained many species which might be well acclimatised in British gardens, and would be very valuable additions to our alpine and herbaceous gardens. Mr. Farrer then proceeded to give short descriptive notes of numerous Japanese plants, mostly well known in this country. His lecture concluded with an exhibition of coloured lantern-slides from photographs taken by himself in Japan.

HORTICULTURAL CLUB.

MAY 9.—On Tuesday last, on the occasion of the monthly dinner and meeting, there was an unusually large attendance of members and friends to hear Mr. E. H. Wilson read a paper on "Journeyings in China." Sir Jno. T. D. Llewellyn, Bart., presided, and the visitors included Dr. Henry, Mr. W. Watson (Kew), Mr. Gill, of the Botanical Station at Cawnpore, J. Weathers, W. Hales, and others. It is well known to readers of this journal that Mr. Wilson has been sent to China on two occasions by Messrs. Jas. Veitch & Sons to collect new and rare plants, and many of the herbaceous species he has introduced to this country have been already illustrated in our pages. In the issue for February 25 last may be found a summary of the work Mr. Wilson did during his five years' experience in China and Thibet, and of the 5,000 species of plants he collected, more than 2,000 of which we believe he has succeeded in introducing into this country by means of seeds or plants, some of what appear at present to be most noteworthy were there mentioned. Even in this present issue further evidence of the value of Mr. Wilson's work may be seen in the report of the Royal Horticultural Society's meeting, when several new plants from China received awards from the Floral Committee. Mr. Wilson's paper at the Club described some of his experiences during his travels in southern, western, and central China. He had much to say upon the richness of the Chinese flora, especially in the district around Hupeh and on the borders of Thibet. He also said that many plants bearing the specific name of japonica, as Anemone japonica, Kerria japonica, Senecio japonica, Spiræa japonica, &c., were really Chinese species, and though some of them were common to both countries, others were cultivated plants in Japan, and indigenous only to China. Mr. Wilson acknowledged the help afforded him by Dr. Henry upon his arrival in China, and went on to speak of the physical character of the country, and of the customs of the Chinese and Thibetans. The pressure upon our space this week, however, will not permit us to enter more fully into the subject, but Mr. Wilson will probably do so on a future occasion.

Dr. Henry, who is always interesting when speaking of China, having spent twenty years in that country, paid a high tribute to the courage, sagacity and energy which Mr. Wilson had displayed during his singularly successful career as a plant collector. Dr. Henry afforded his hearers much information upon the flora of China, and related some interesting details concerning a botanical tour made by Mr. Wilson and himself.

Mr. W. Watson spoke of the circumstances connected with Mr. Wilson's service in the Royal Gardens, Kew, and which led to his being selected to proceed to China. Owing to the kindness of Messrs. Jas. Veitch & Sons, a large number of mounted specimens from Mr. Wilson's herbarium were exhibited before those present, and in addition there were photographs taken in China during Mr. Wilson's travels. The meeting was a very enjoyable one, and Mr. Wilson was invited to give another paper on the subject to be illustrated with lantern-views.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

MAY 8.—A Committee meeting was held on the above date at the Royal Horticultural Hall, Vincent Square, Westminster, Mr. C. H. Curtis presiding. Three new members were elected and one nominated. The death certificate of the late Mr. R. H. Robinson, of Heversham, was produced, and the amount standing to his credit in the Society's books was directed to be paid to his nominee. Fourteen members were reported on the Sick Fund; the amount paid out for sickness during the month being £41 8s.

MARKETS.

COVENT GARDEN, May 10.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldi, p. dozen	4 0- 6 0
Araucaria excelsa, per dozen ...	18 0-30 0
Aspidistras, green, per doz. ...	21 0-36 0
— variegated, per doz. ...	30 0-42 0
Azalea indica, doz.	30 0 60 0
— mollis, p. doz.	18 0-24 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0
— Sprengeri, doz.	8 0-12 0
— tenuissimus per doz. ...	8 0-10 0
Bedding plants, store boxes, each	1 0- 1 6
Begonia Gloire de Lorraine, doz.	12 0-18 0
Boronia elatior, per dozen ...	12 0-24 0
— heterophylla.	18 0-24 0
Calceolarias, yellow, per dozen .	6 0- 9 0
Calla æthiopica, per doz. ...	4 0- 6 0
Chrysanthemum coronarium, double yellow, per dozen ...	8 0-10 0
Cinerarias, p. doz.	4 0- 6 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	12 0-30 0
Cyperus alternifolius, p. doz.	3 0- 5 0
— laxus, p. doz.	3 0- 4 0
Dracænas, p. doz.	9 0-24 0
Ericas, per doz....	12 0-30 0
Euonymus, dozen	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
Ferns, in 32's, doz.	12 0-24 0
— hardy roots ...	0 6- 1 0
Ficus elastica, p. doz.	9 0-12 0
— repens, p. doz.	5 0- 8 0
Fuchsias, p. doz.	8 0-10 0
Genistas, per doz.	5 0- 8 0
Heliotropes, per dozen	5 0- 8 0
Hydrangea, Thos. Hogg, p. doz.	12 0-18 0
— Hortensia, p. dozen	10 0-15 0
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Lobelia, per. doz.	5 0- 6 0
Latania borbonica, per doz. ...	12 0 18 0
Lilium Harrisii, per dozen ...	18 0-24 0
Marguerites, per dozen	6 0-10 0
Mignonette, doz.	5 0- 8 0
Pansies, per box...	1 0- 3 0
Pelargoniums, per doz., Show.	12 0-18 0
— Ivy-leaved ...	6 0- 8 0
— zonal	4 0- 6 0
— Scarlet do. ...	4 0- 5 0
Rhodanthe, doz.	5 0- 6 0
Rhododendrons, per dozen ...	24 0-30 0
Roses, H.P.'s, per dozen	9 0-18 0
— Crimson Rambler (large), each	3 6- 5 0
Saxifraga pyramidalis, per doz.	12 0-15 0
Spiræa japonica, per doz. ...	4 0- 9 0
Stocks, Intermediate, per doz.	4 0- 6 0
Verbena, Miss Willmott, per dozen	10 0-12 0

Cut Flowers, &c.; Average Wholesale Prices.

	s.d. s.d.
Azalea mollis, p. dozen bunches.	9 0-12 0
Bouvardia, per doz. bunches	6 0- 8 0
Calla æthiopica, p. doz. blooms	2 0- 3 0
— Elliottiana ...	12 0-18 0
Camellias, per dz. blooms	1 6- 2 0
Carnations, p. dz. blooms, best American vars.	2 6- 5 0
— smaller do. ...	1 0- 2 0
— Malmaisons ...	8 0-12 0
Cattleya, per doz. blooms	9 0-10 0
Daffodils, per dz. bunch., single yellow ...	2 0- 4 0
— double, do. ...	2 0- 3 0
— Barrii conspicuus ...	3 0- 4 0
— bicolor... ..	2 0- 4 0
Dendrobium nobile, doz. blooms	1 6- 2 0
— Wardianum ...	1 0- 2 0
Eucharis grandiflora, doz. blms.	4 0- 6 0
Gardenias, per dz. blooms	0 9 1 0
Gladiolus Colvillei, per bunch ...	1 0- 1 6
Gypsophila, per dozen bunches	3 0- 6 0
Iris, Spanish, per doz. bunches	2 0- 3 0
— best English grown, bunch of 12 stems ...	1 0- 1 3
Lilac, per bunch.	1 0- 2 0
Lilium auratum, per bunch ...	2 6- 3 0
— candidum ...	1 0- 1 6
— lancifolium, rubrum and album... ...	2 0- 3 0
Lilium longiflorum ...	2 0- 3 0
— tigrinum ...	2 0- 2 6
Lily of the Valley, dozen bun. ...	9 0-18 0
Marguerites, per doz. bunches, white	3 0- 4 0
— yellow... ...	4 0- 5 0
Mignonette, doz. bunches ...	4 0- 6 0
Narcissus, per doz. bunches, Pheasant's Eye	1 0- 2 0
— double white.	4 0- 5 0
Odontoglossum crispum, pr. dz. blooms	1 6- 2 0
Pelargoniums, p. doz. bnchs.	
— Show	4 0- 6 0
— Zonal, double scarlet ...	4 0- 8 0
— salmon & pink	4 0- 6 0
Poppies, Iceland, dozen bunches	6 0- 9 0
Rhodanthe, doz. bunches ...	3 0- 4 0
Roses, 12 blooms, Niphetos ...	1 0- 3 0
— Bridesmaid ...	3 0- 5 0
— Kaiserin A. Victoria ...	2 0- 4 0
— General Jacqueminot ...	1 0- 2 0
— C. Mermet ...	3 0- 4 0
— Caroline Testout	3 0- 6 0
— Liberty ...	3 0- 5 0
— Mad. Chatenay	4 0- 7 0
— Mrs. J. Laing.	2 0- 4 0
— Sunrise ...	1 6- 2 6
Stephanotis, doz. trusses ...	1 0- 2 6
Sweet Peas, doz. bunches ...	4 0- 9 0
Tuberoses, per dozen blooms	0 3- 0 6
Tulips, doz. bun.	6 0-12 0
— special double varieties ...	18 0-24 0

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, bushel ...	2 6- 6 0
— English, per sieve or half bushel ...	1 6- 3 0
— — per barrel.	8 0-16 0
— Victorian and Tasmanian, p. case	9 0-12 0
Bananas, per bunch... ...	6 0-12 0
— loose, per dozen	1 0- 1 6
Figs, per dozen ...	2 6- 8 0
Grape-Fruit, per case	8 0-12 0
Grapes, Alicante, per lb. ...	1 6- 1 9
— Hambro, lb....	3 0- 4 0
— Muscats ...	4 0- 6 0
— Almeria, doz. lb.	8 0-10 0
Lemons, per case	8 0-11 0
Melons, each ...	1 6- 3 0
Oranges, per case	11 6-18 0
— Blood, p. box	8 0 21 0
— Jaffa, per box	18 0 —
— Muria. case ...	10 0-14 0
Peaches, doz., A.	15 0-24 0
— " B.	4 0- 8 0
Pines, each ...	3 6- 6 0
Strawberries, A., lb.	2 0- 3 0
— — B., per lb...	1 0- 1 3

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.
Anemones, per doz. bunches, coronaria ...	2 0- 3 0
— fulgens ...	2 0- 3 0
Carnations, per doz. bunches ...	9 0-12 0
Fern, French (Asplenium adiantum nigrum), p. dozen bunches	6 0 —
Freesias, per doz. bunches ...	2 0- 4 0
Ixias, per dozen bunches... ...	2 6- 3 0
Marguerites, per doz. bunches ...	2 0- 3 0
Roses, per basket	4 0- 5 0
Stocks, double white and pink, dozen bunches	3 0- 4 0

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6- 0 9
— — medium, each ...	0 4- 0 6
— — short sprays per bunch...	1 0- 2 6
— Sprengeri ...	0 9- 1 6
— tenuissimus..	9 0-12 0
Adiantum cuneatum, per dozen bunches... ...	4 0- 6 0
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	3 0- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails, per bundle ...	1 0- 2 0
— short green, doz. bunches	1 0- 1 6
Moss, per gross...	5 0- 6 0
Myrtle, doz. bun.	3 0- 4 0
Smilax, p. dozen trails	4 0- 6 0
Hardy foliage (various), per dozen bunches	3 0- 4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	2 6- 3 0
Asparagus, bunch	0 9 2 6
— Giant	5 6- 7 6
— English giant	12 0 —
— Paris Green...	1 6- 2 0
— Spanish, bunch	0 11 —
— Sprue, p. doz.	3 0- 4 0
— Toulouse, bch	1 6- 1 9
Beans, dwarf, per lb.	0 8- 1 0
— Channel Island	0 8- 0 9
Beetroot, bushel	2 6- 3 0
Cabbages, p. tally	3 0- 5 0
Carrots, 12 bunch.	3 6- 4 0
— new	6 0 —
— bag	4 0- 6 0
Cauliflowers, doz.	1 6- 2 6
Cress, doz. pun.	0 9 —
Cucumbers, doz.	1 6- 2 6
Endive, per doz.	2 3 —
Garlic, per lb. ...	0 6 —
Greens, bushel ...	0 9- 1 0
Horseradish, per doz.	9 0-10 0
Mint, per dozen...	2 0- 3 0
Leeks, per dozen bundles	1 6- 2 6
Lettuces, Cabbage, per dozen ...	0 10-1 3
Mushrooms (house) per lb.... ...	0 5- 1 0
Onions, pickling, per sieve ...	3 6- 4 0
— Egyptian, cwt.	6 0- 7 6
— Green, 12 bun.	3 6- 4 6
— Valencia, per case	14 0-15 6
Parsley, 12 bunch.	1 6- 2 6
Peas, French, pkt.	0 3- 0 6
— Frame, per lb.	0 6-0 10
— Flats	4 6- 5 6
Potatos, per ton	90 0-100 0
— Frame, lb. ...	0 3 —
— Algerian, cwt.	16 0-19 0
— Teneriffe, cwt.	11 0-14 0
Radishes, p. doz. bunches ...	1 0 —
Rhubarb, York, dz.	2 0- 2 6
— Natural, doz.	2 0- 2 6
Seakale, per doz.	14 0-16 0
Spinach, bush. ..	1 0- 1 6
Tomatos, bundle	18 0-20 0
— English, p. lb.	0 8- 1 0
Turnips per doz.	2 6 —
— per bag ...	2 6 —
— new, bunch ...	0 6 —
Vegetable Marrows, per doz. .	6 0- 8 0
Watercress, per doz. bunches.	0 4- 0 7

REMARKS.—Strawberries are now arriving daily in great quantities, consequently prices for these fruits are very low. A few Cape Pears arrived during last week, and were sold at 5s. to 7s per case; others from Australia made from 4s. to 12s. per case. Quantities of Apples, shipped from Australia and Tasmania, are due to arrive this month, the bulk of which will be sold in London. A boat is expected to arrive on or about Saturday, May 13, with about 16,000 cases. The quantity estimated to arrive from now till the end of the present month is about 111,000 cases.

POTATOS.

Dunbars, 100s. to 110s.; various, home-grown, 55s. to 80s. per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

THE spring trade in plants has now commenced in earnest, and for the next few weeks trade should be busy. Prices do not rule high, and supplies of the usual plants for spring use appear to be plentiful. Scarlet and other zonal Pelargoniums sell in large quantities, but only realise moderate prices. Ivy-leaved varieties sell better; of these the varieties Galilee and Madame Crousse are most in demand. Show and decorative sorts do not sell at all briskly. Yellow Calceolarias and Lobelia Emperor William are now seen. The last-named plant is scarcely in full flower. Fuchsias sell better, and at advanced prices. Hydrangeas continue to sell well, dwarf plants being in demand for window-boxes. Ericas of good quality are still to be had. Most growers have now finished with Cinerarias, but there are still some to be had. Supplies of Mignonette are not quite so plentiful, that raised from spring-sown seed is not ready for the market, but may be available in the course of a few days. Intermediate Stocks are very good, but they do not sell at all readily. Rhodanthe is abundant. There are still some very good Indian Azaleas seen, but they will not be available for a much longer period. Begonia Gloire de Lorraine and the Turnford Hall variety are present, but the quality is less good.

FOLIAGE PLANTS.

Although many Fern growers now fill a portion of their stands with bedding plants, there is no scarcity of Ferns except for some kinds in large-sized pots. Aspidistras are scarce; growers do not care to bring them into the market while they are developing their new leaves. Palms of various sizes sell better, but there is little variation in the demand or in the prices for any foliage plants.

BEDDING PLANTS.

These are now selling freely, and good plants in 3-inch pots are cleared out early. Zonal Pelargoniums (Geraniums) of scarlet and other colours make from 1s. 9d. to 2s. 6d. per dozen, while "tricolors" command somewhat more. Petunias are well grown and sell freely at from 1s 9d. to 2s. per dozen. All other varieties of bedding plants are procurable at ordinary prices. Pansies do not sell readily, and hardy flower roots are in less demand.

CUT FLOWERS.

Trade in cut flowers is a trifle better, but there appears to be little variation in prices. Some things are considerably in excess of all demands. Roses continue good, but large quantities are left over at closing time. Supplies of Carnations are over plentiful. Liliums are at their lowest prices. Callas are not so plentiful. Supplies of Daffodils are almost over, but the double white Narcissus and Poeticus still appear fresh and in good condition. Spanish Iris are plentiful. Gladiolus Colvillei, The Bride, and the pink variety, are more abundant than they were. Orchid bloom does not sell readily. Many hardy flowers are now arriving in the market. Double Trollius are very pretty. The trade in imported flowers is now nearly over for the season, but Gypsophila, Roses, Carnations, Marguerites, and Cornflowers still come from France, while there are also some Dutch-grown flowers. *A. H., Covent Garden, May* 10, 1905.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending May 6, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
APRIL 30 TO MAY 6.	At 9 A.M.		DAY.	NIGHT.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	49	45	58	41	35	50	50	48	Tot 0·47	8	18

THE WEATHER IN WEST HERTS.

Almost Continual Sunshine.—The days have been mostly warm, while the nights, on the other hand, were all more or less cold. Consequently the range in temperature has been on most days unusually great. For instance, on the 9th, the difference between the lowest and highest readings in the thermometer screen amounted to as much as 32°. On the two warmest days the temperature in the thermometer screen rose respectively to 69° and 67°, the highest readings as yet recorded this year. On the two coldest nights the exposed thermometer showed 5° of frost. The ground is at the present time slightly warmer than is seasonable both at 1 and 2 feet deep. No rain has fallen for a week, and for the last three days no measurable quantity of rainwater has come through either percolation gauge. There has been a splendid record of sunshine, the average daily duration amounting to nine and three-quarter hours, or nearly four hours a day longer than is usual at this season. Light airs and calms, as a rule, prevailed, and for eighty-two hours, or nearly half the week, the direction of the wind was from some point between north and east. The mean amount of moisture in the air at 3 P.M. was as much as 9 per cent. less than is seasonable. A Blenheim Pippin Apple tree growing in my garden came first into blossom on the 5th inst., which is one day earlier than its average date for the previous nineteen years, and eight days earlier than last year. *E. M., Berkhamsted, May* 10, 1905.

[*For actual temperature and condition of barometer at time of going to Press, see p.* 296.]

ANSWERS TO CORRESPONDENTS.

ANTHURIUM PROSCHERSKYANUM: *Berlin.* We have been unable to find any such name.

BERBERIS VULGARIS: *E. G. C.* It is not usual to find the fruits hanging for so long a period. The other plant is Rubus spectabilis, the Salmon Berry.

CATERPILLARS ON APPLE-TREE: *J. J.* The small caterpillars are those of the Winter Moth (Cheimatobia brumata). Syringe the trees now with a solution of Paris Green or of Quassia-extract, and in the late summer place grease-bands round the stems to prevent the wingless female moths from ascending to the branches. CAUTION.—Paris Green is an arsenical poison, and should be used with great care, and in the proportion of 1 lb. to 200 gallons of water, working in 2 lb. of lime to diminish the risk of injuring the foliage.

CODIÆUMS (CROTONS): *J. E. G.* The injury is caused by the accumulation of drops of water on the leaves; this afterwards becomes chilled and kills the tissue of the leaf. Moisture should not be allowed to condense on the surface of the leaf during the night.

FRUIT FARMING DISTRICT: *J. G.* Such a district as you describe will be found around Evesham in Worcestershire. Book to Evesham Railway Station.

GLOXINIAS: *Anxious.* The corms are alive with the bulb-mite. It is possible that the corms were wintered in unsuitable conditions, which induced decay, and that the mites have increased in numbers since then. In any case, the only thing to do now is to burn the plants and raise a fresh stock, there being no cure for such a severe attack.

GOOSEBERRIES: *F. W. T.* There is no evidence of attack by insects or fungus. We are disposed to think the injury has been caused by birds.

GOOSEBERRY LEAVES: *A. D.* The leaves are attacked by the Gooseberry fungus, Æcidium grossulariæ, fig. 126. Spray the plants with Bordeaux-mixture (see p. 288 in our last issue), taking care to decrease the strength of the solution as the fruit approaches maturity and to cease spraying altogether before the fruit is fully ripe. Permanganate of potash solution is also a good preparation to use as a fungicide. Dissolve crystals of permanganate of potash in water until the solution is of a pale rose-colour. Apply this as a fine spray, especially on the undersurfaces of the leaves. One stage in the life-history of Æcidium grossulariæ occurs on plants belonging to the Sedge family. These weeds should as far as possible be eradicated. Currants are not immune from the attacks of this disease; it even attacks the flowering Currants of the shrubbery.

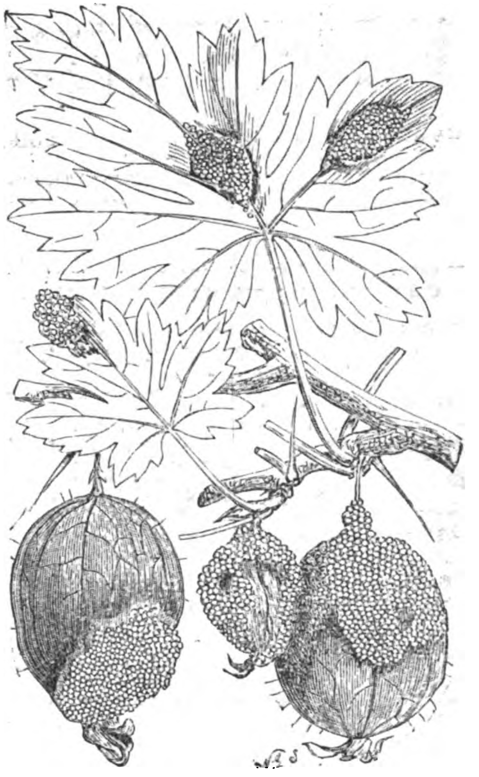


FIG. 126.—GOOSEBERRY DISEASE: ÆCIDIUM GROSSULARIÆ.

HONEYSUCKLE: *E. G. C.* Our opinion is similar to your own. The soil and roots smell strongly of paraffin-oil, and of course this liquid, if present in sufficient quantity, is quite capable of killing the plants.

NAMES OF PLANTS: *Subscriber, Milan.* Phlox subulata variety.—*F. K.* Pyrus prunifolia, the Siberian Crab.—*J. S.* 5, Asparagus sarmentosus.—*W. T., Gloucester.* Cypripedium ciliolare.—*H. L.* Milla (Triteleia) uniflora.—*R. N. H.* Odontoglossum gloriosum. There being only a few flowers on the spike, they are slightly larger than when the normal quantity is borne.—*Japonica.* 1, a Dendrobium of the Aporum section, not to be determined without flowers. All the section bear small white flowers; 2, Dendrobium crepidatum; 3, D. thyrsiflorum; 4, Oncidium maculatum; 5, O. sarcodes, a very fine variety.—*W. C.* 1, Odontoglossum cordatum; 2, Masdevallia coriacea.—*G. R. D.* 1, Olearia stellulata; 2, Asperula odorata.—*A. W. G.* 1, Cratægus crus-galli; 2, Limnanthes Douglasii; 3, probably Salix capræa. Thank you for enclosure, 1s., for the Gardeners' Orphan Fund.

PALMS: *W. M.* Palms frequently outgrow the limits of the house in which they are grown, and unless they are growing in pots or in tubs and can be lowered by forming a trench in the house, there is no alternative but to shorten them at the top. The plants have to be thus treated occasionally in the Palm house at Kew.

PEACH-LEAVES: *T. M.* The leaves have been checked in their growth by cold draught or some other cause. They seem also to be attacked by fungus.—*S. D. O.* Some of the leaves look as if they were scorched, others have the Shot-hole fungus (Cercospora). Spray them with a solution of liver-of-sulphur: ½ oz. of sulphur to 1 gallon of water.

PIG'S EARS FUNGUS: *Lord Kesteven.* The fungus sent under this name is Peziza (Cochleata) reticulata (Greville), figured in Cooke's *Mycographia*, plate 58, fig. 227. It is found growing on the ground in spring, and is esculent. It is found not only in Britain, but in several other countries of Europe. The cups sometimes attain to a diameter of 5 inches. *M. C. C.*

SEEDS: *An Old Reader.* The seeds are of the Flamboyant, Gold Mohur, or Gulmohr tree (Poinciana regia), a handsome evergreen Leguminous tree, native of Madagascar, extensively planted throughout the warmer parts of India, and frequently in towns and villages on the eastern coast of Tropical Africa and in Angola. The tree grows very quickly, and is described as gorgeous when in flower, with its large corymbs of crimson and its bright green leaves.

SOIL ANALYSIS: *J. W.* We cannot undertake this laborious, costly and time-consuming task. See reply to "E. G."

TOMATO LEAVES: *J. H. A.* There is no fungus present. The brown enlarged veins are caused by too much acid in the soil. Water the soil with a solution of nitrate of potash, 1 oz. to a gallon of water, three times, at intervals of four days between each application.

VINE LEAVES: *M. P.* The small warts on the under surface of the vine leaves are due to the presence of excess of moisture in the house. Better ventilation, more especially early in the day, will set the matter right.—*E. G.* The warts on your leaves are the result of defective ventilation and excessive moisture. It is quite possible that there is also a mite concerned in the matter. If you wish the soil and water analysed, you should send samples to some competent analyst, or to the chemist of the Royal Horticultural Society, but you must be prepared to pay his fee.

VINES: *J. B.* The branches are quite free from any disease due to insects or fungi, and it is impossible for us to ascertain the cause of the injury.—*J. H. H.* We suspect that the dressing contained too much Fir-tree oil, or it was put too thickly upon the canes and smeared over the buds. A properly-mixed dressing, if applied with care and at the proper season, does no harm to the Vines.

COMMUNICATIONS RECEIVED.—F. W. B.—F. M.—H. Correvon—J. H. W.—J. H., Haarlem—R. E.—G. S.—M. S.—W. B. G.—Paul & Son—T. B. B.—Taber & Co.—C. C. (next week)—W. W.—C. R.—F. W. B.—Lord A. (too late for this week)—T. R.—J. O'B.—J. M—T. M.—J. K. B.—W. R. W.—R. B.—J. S. T.—R. P.—E. J. A.—S. W. N.—J. C.—H. W. W. Chloris.—R. M.

THE
Gardeners' Chronicle

No. 960.—*SATURDAY, May* 20, 1905.

CONTENTS.

Anemone nemorosa, a double form of ... 307
Apples, coreless ... 313
Blechnum spicant, a variegated plant of . 307
Bog plants 308
Books, notices of—
  Almanac, the Rational 313
  Manual of the Trees of North America . 307
  Publications received 313
Climate and vegetation 313
Colour of flowers, the . 312
Cucumber "spot" disease 316
Currant-bud mite, the 316
Flower-beds, effective 315
Fruit register 309
Gardeners' Association, the British 313, 319
Gardening in Austria and Germany ... 305
Gentiana acaulis, a white form of ... 313
Gray, Mr. J. S., presentation to 313
Irish garden, plants in an 315
Meconopsis integrifolia 317
Melon, a good early ... 315
Morel, cultivation of the 313
Narcissi, two new ... 309
Onions, Bermuda ... 316
Orchid collecting risk in 316
Orchid notes and gleanings 309
Orchid with a movable labellum ... 314
Orphan Fund, Royal Gardeners', annual dinner 319
Pear-midge, the ... 315
Pinus Nelsoni 306
Planting, wise and unwise 313
Schröder, Baron, retirement of 312
Seed-sowing 316
Societies—
  Ealing Horticultural 319
  Liège Horticultural Exhibition... ... 318
  Linnean 319
  Manchester and N. of England Orchid 319
  Royal 313
  Royal Botanic ... 319
  Royal Horticultural 313
  (Scientific Committee) 318
Travellers, commercial, in gardens ... 315
Trees, timber value of exotic 317
Trillium grandiflorum 308
Tying material, a useful garden ... 313
Vegetables at exhibitions 316
Walmer Place, near Deal 311
Warren, the, Hayes, Kent 308
Week's work, the—
  Flower garden, the 310
  Fruits under glass... 311
  Hardy fruit garden 310
  Kitchen garden, the 311
  Orchid houses, the 311
  Plants under glass... 311

ILLUSTRATIONS.

Anemone nemorosa, a double-flowered form of ... 307
Dendrobium parcum showing movable labellum ... 314
Narcissus "Nectarine" 309
Narcissus "Pelops" 309
Pear Midge, the... 315
Pinus Nelsoni 306
Trillium grandiflorum 308
Views in the gardens at Walmer Place, near Deal (Supplementary Illustration).

SOME ASPECTS OF GARDENING IN AUSTRIA AND GERMANY.

A TRAVELLER, seeing the gardens of these extensive countries, will remark the paucity of the rarer species of coniferous trees and evergreens generally. Those which he finds are in many instances indigenous and possessed of no great beauty. there being hardly any Japanese, Chinese, Chilian, New Zealand, or Californian species, which in our own country have largely added to the beauty of our gardens and pleasure-grounds during the last fifty years. One greatly misses the Cypresses, Cryptomerias, Retinosporas, Eucalyptus, Podocarpus, and Araucarias among arboreal forms; and the Veronicas, Olearias, Aucuba japonica, the female form of which last is one of the best berried plants; Azara, Carpenteria, Osmanthus, Pittosporum, and others among more lowly forms. The cause of the scarcity of evergreen shrubs from the countries named is in most parts due to the severity of the winters prevailing from the North Sea to Kärnten (Carinthia).

The Yew in its many varieties is largely employed as solitary examples and as material for hedges and wind-breaks, and sometimes as game coverts, although for these the common Spruce (Picea excelsa), maintained at a height of 4 to 5 feet by occasional cutting, is met with. Several Arbor-Vitæs (Thuya) as T. gigantea and its varieties, T. occidentalis, the American species; Thuiopsis nootkatensis, from British Columbia; Wellingtonia (Sequoia) succeed in sheltered gardens, as also Cedrus atlantica, but I have never observed the Lebanon or the beautiful Deodar Cedar in the open ground, these being considered to be safe only in the glasshouse or winter-garden during the winter season, placing them out-of-doors along with other partly hardy things from early May till October. The deciduous Cypress (Taxodium distichum) does well in some parts, as for example in the gardens of Graf Harrach at Bruck-on-the-Leitha.

The Pines furnish a more numerous contingent. P. Strobus (Weymouth Pine) grows to a large size, its horizontally-poised upper branches supporting the heavy falls of snow without injury. The Scots and Austrian Pines, the Pitch Pine, P. insignis, P. excelsa, a Himalayan species, and P. Pinaster, are garden and forest trees. The American and Siberian Larches are common, and the Maidenhair-tree (Ginkgo) is often met with of large size, and when raised from seed the tree has a handsome contour. Lawson's Cypress in its several varieties is quite hardy, and is one of those rarely browsed upon by roe and red-deer during hard weather.

The Red Cedar (Cupressus virginiana), the wood of which is almost exclusively used in the manufacture of lead-pencils, grows fast, and being well adapted to wet and swampy soils, is employed for forming groups, shelter-belts, and garden-hedges. Of the Hemlock Firs (Tsuga), T. Menziesii, the Columbian species, and T. canadensis (Pseudo-tsuga), T. Pattoni, and T. Hookeriana withstand the climate, and form fine ornamental trees. Of the Silver Firs that are hardy mention may be made of Abies grandis, A. lasiocarpa, A. nobilis, A. Nordmanniana, A. balsamea, and A. concolor. Picea excelsa in its many varieties is found in forests and gardens, and P. nigra, P. orientalis. and P. pungens are met with in gardens only.

Among deciduous species of trees, Acer campestre, also A. fraxinifolium in white-and-yellow variegated varieties, are common garden and park trees, as are also the Norway, the Scarlet, and Sugar Maples, Horse-Chestnuts in variety, also Æsculus flava and Æ. macrostachya, the latter forming a spreading flat-headed bush, very decorative when in flower. The Ailanthus glandulosa, which grows to large dimensions, is commonly employed as a street tree; and Mountain Ash (Pyrus Aucuparia) is quite hardy. It forms a beautiful avenue half-tree, which when loaded with ripe fruits is exceedingly effective. Hornbeam, American Walnuts, and Catalpa syringæfolia and C. speciosa are common in some parts, the latter growing to large dimensions if the soil be moist; likewise the Nettle-tree, which forms round-headed specimens, and is well adapted for planting on the margins of lakes and rivers, are commonly met with.

The Thorns (Cratægus) grow well and flower profusely, and Quinces (Cydonia) make the garden gay when in flower, as do Pyrus Malus (Crabs), P. prunifolia (the Siberian species), P. spectabilis, and others. The true Service tree (Pyrus Sorbus) and P. torminalis grow to a large size, and fruit abundantly. Most species of Oak attain to full size, especially beautiful in late autumn being the American Quercus rubra, Q. rubra aurea, Q. coccinea, Q. palustris, and Q. tinctoria. The common Beech in its many varieties finds a place in gardens; and of the Ash family Fraxinus Ornus is to be found in fine examples, its compound leaves sometimes reaching a length of 3 feet. In the more northerly parts of the country this tree needs protection against frost.

The Gleditchias are favourite trees, and in the south their fruits (pods) are produced in abundance. The Tulip tree (Liriodendron) reaches to a height of 60 feet, and blossoms well in the generality of years. A handsome picture-tree, not much planted in England, viz., Magnolia acuminata, is sometimes observed as a lawn tree. The flowers are greenish-yellow, and when the Cucumber-like seed-vessels burst the scarlet seeds within become visible.

Most of our commoner deciduous shrubs are largely planted, and when not treated in the pernicious manner common in some places; that is, by being clipped into shape in winter and late summer, they bloom profusely as a rule. This clipping is in a measure rendered necessary by the fashion of planting shrubberies close to the margins of the walks for the purpose of affording only small glimpses of the landscape at a time. These surprise views are all very well when indulged in in moderation, but in excess they are productive of monotony.

The traveller misses the Portugal and common Laurels, the glorious Rhododendrons, the pride of many English gardens; the Arbutus, Daphnes, Cistus, Japanese Euonymus, the Holly (which is disfigured or killed by exposure to ardent sunshine, but is otherwise hardy), the Laurustine, Bamboos and Yuccas. Perhaps it is for the best, as such plants would have but small decorative value for half the year, whilst snow and frost reign over all the country withering their leaves and giving them a distressing appearance. Better a garden free of evergreens possessing large leaves, and rely for winter shelter upon Conifers, such as Cypresses, Arbor-vitæ, Yews, and the like, which withstand the severe frosts and suffer scarcely at all in appearance.

Gardening in Germany, Austria, Hungary, Bohemia, Bavaria, and Central and Eastern Europe in general, has no existence for the many, excepting in the public parks and gardens. There are few horticultural societies, and these only to be found in the larger cities and towns, and but rarely in the villages.

The seats of the nobility and rich gentry are not scattered over the face of the country as in these islands, but, on the contrary, are nearly always found in close proximity to towns or villages, a condition of things that is due in great part to the interminable state of war that prevailed in past ages, which drove men to live in fortified places for mutual protection and safety. Plant nurseries are few and far between, and seeds of any kind can only be purchased in the large towns. The writer resided in a village fifty miles distant in any direction from a florist, nurseryman, or seedsman. In many parts the farmers possess no house garden, their few wants being furnished from patches in the open fields, with usually no other cultivation than that given the field crops. The staple crops consist of Potatos grown on an extensive scale in fields by themselves for house consumption, distillation, and export. There are no Eldorados or Up-to-Dates among these, still, the raising of new varieties is not neglected. Gourds in plenty are grown, and in the countries warm enough in summer for the ripening of Maize under the shade of the latter, as are also Gherkins and short, thick Cucumbers, mostly for putting in salt-and-water pickle, and Cantaloup Melons. Onions are largely grown, and the indispensable Garlic; Haricot Beans, for winter consumption as well as eating in the unripe state; Cauliflowers, Cabbages, Cabbage-Lettuces, and long, white Radishes are in common use in most households; Broad Beans (Saubohnen), Broccoli, Celery for blanching, Rhubarb, Seakale, and Asparagus are but little grown, and usually can only be obtained at the shops of the foreign fruit and vegetable importers. Strawberries are much grown, and the old Carolina still remains a favourite variety. In some parts the alpines are much appreciated, and preferred generally to named varieties. It is seldom that bushes of small fruits find a place in gardens, excepting in those of the wealthy, although they are proof against such frosts as occur.

Cranberries and Plums take the place of the Red Currant in the making of sauce to be eaten with game. The first-named berries are gathered generally from wild plants. The Black Currant is not much grown. The Schwetche Plum—a small blue-black fruit, that bears abundantly and is good for culinary and dessert uses—is universally grown, and as far south as Bosnia and Servia.

The Peach and Apricot are usually raised from seed, excepting in the better class of gardens, the vine-farmers in Austria, Hungary, Croatia, and Kärnten planting the trees sparingly among the Vines, and seldom keeping them after their sixteenth year. When ennobled varieties are grown, the stock chosen on which to bud them is the Almond, this being the best for a hot summer climate, its roots going deeper into the soil in search of moisture than do those of the Plum. In northern Germany these fruits are usually afforded wall-protection, and fine, named varieties are planted.

As one travels south the Grape vine begins to find a place on sunny walls, the fruits of most varieties ripening perfectly in ordinary years; and in Lower Austria and in the countries bordering the Rhine below Cologne, vineyards become common, and many varieties of wine and dessert Grapes are grown on short stocks in them and in fruit gardens, the vine-stocks being cut down similarly to our basket Willows. A stock will carry from 10 to 15 lb. of Grapes.

The Fig requires protection everywhere north of the Danube in winter, and given this and full exposure to the sun from May till September, enormous crops of fine fruits reward the cultivator.

Apples, Pears, and Cherries find cultivators almost everywhere; by the sides of the highways and in orchards and gardens as standards, bushes, pyramids, and espaliers. Where proper attention is given to the requirements of the trees the produce is commendable, Pears and Cherries more especially. Apples, like those grown in the northern and eastern United States of America, are usually of high colour, but light of weight for their size. Root-pruning to produce fertility is not much understood. *F. M.*

PINUS NELSONI.

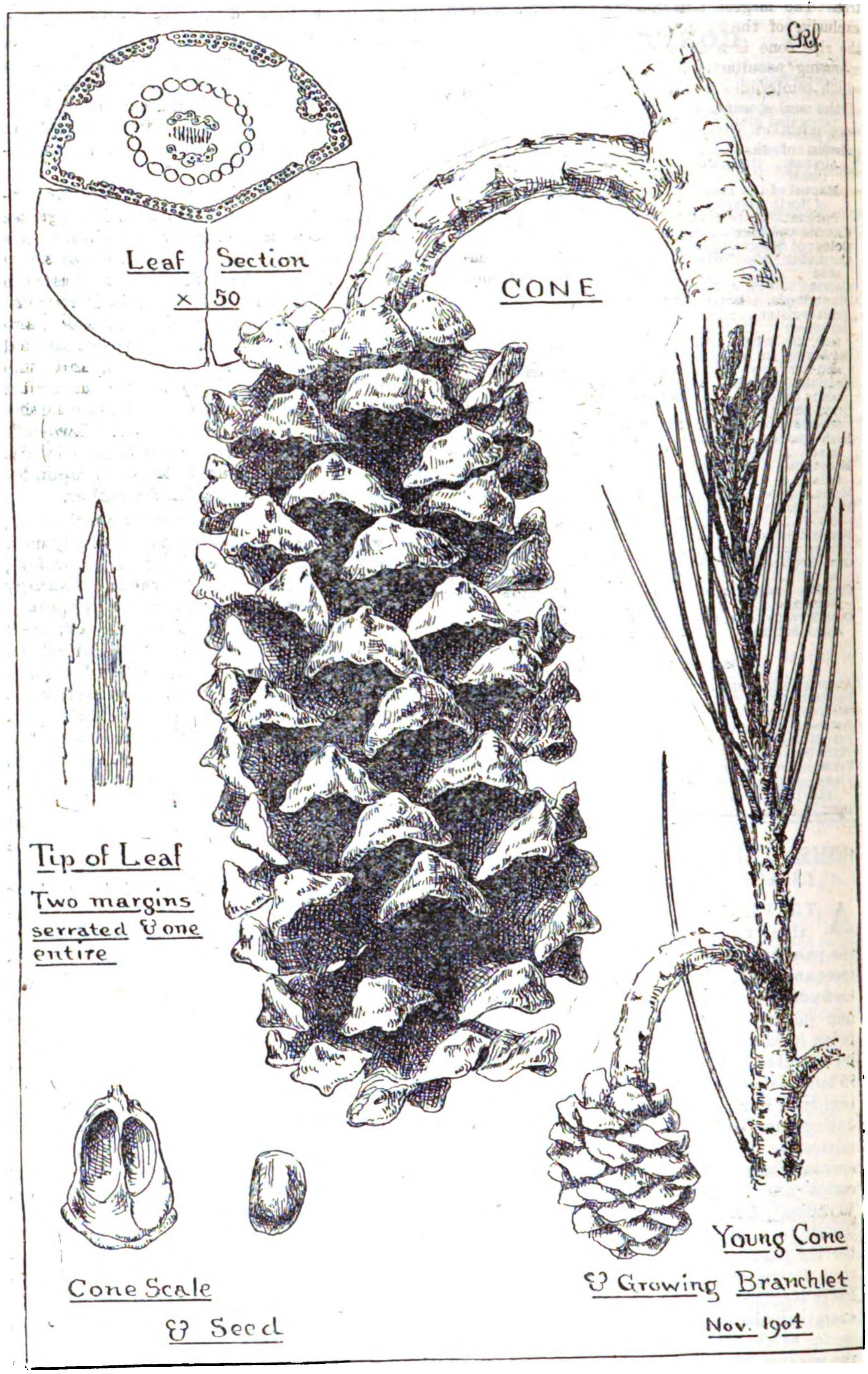

Leaf Section
× 50
CONE
Tip of Leaf
Two margins serrated & one entire
Cone Scale & Seed
Young Cone & Growing Branchlet
Nov. 1904

Fig. 127.—Pinus Nelsoni.

In Southern Nuevo Leon, a state of North-eastern Mexico, to the eastward of the town of Doctor Arroyo, and on the lower slopes of the Peña Nevada, a mountain with a conspicuous exposure of white chalk, Pinus Nelsoni grows in great abundance with P. cembroides, Zuccarini. It is a small tree, smaller than cembroides, rarely exceeding 20 or 25 feet in height. Its trunk, which may acquire a maximum diameter of 8 or 10 inches, is covered with a smooth grey bark, as smooth as that of the American Hornbeam, and of somewhat the same colour. Its long, tough, supple branches are very slender, the lowermost dying first, but persisting in conspicuous grey masses, so that the tree never loses the outline and appearance of a large bush. The foliage is grey-green and sparse, contrasting strongly with the closely-packed rich green leaves of cembroides. On all the trees the three leaves which form each fascicle are permanently adherent, and the basal sheath is persistent, characters which enable the specimens of this species to be easily identified.

The cones of Mr. Nelson's specimens, on which the species was founded (*Gardeners' Chronicle*, August 20, 1904), prove to be very immature. The mature cones vary in size, even on the same tree. The largest collected were 5 inches long, exclusive of the 2½-inch curved stalk. In colour the ripe cone is a deep red or orange-red, the colouring peculiar to the group of nut Pines, of which cembroides is the type. The projections of the scales, which on Mr. Nelson's specimens were mistaken for the umbos, prove to be outgrowths of the apophyses. The umbo is not defined, the result, probably, of the continuous growth of the cone, which, unlike the cone of cembroides and other known Pines, seems to have no resting season.

In November (1904) the young cone was comparatively large, green, and the scales tipped with a purple area of indefinite outline and varying size. At maturity the cones open (they do not remain closed as stated in the first description), and remain on the tree into the third season, when the basal scales become weakened from exposure, and the cone falls, leaving the persistent stalk, and often a few scales with it, on the tree. After falling the cone disintegrates rapidly. The seeds are large and wingless, and, according to the testimony of the natives, are eagerly eaten by the macaws (guacamayas). They were found exposed for sale in the market of Matehuala, the nearest railway-station.

An additional peculiarity of this remarkable Pine is the indefinite growth of the branchlets. Probably at the beginning of their growth the young cones were sub-terminal, but in November they had become lateral by reason of a continuous growth all over the trees. Beyond all the young cones were growing shoots with leaves of graduated lengths, and buds elongating for still further growth.

Specimens collected in this locality by Mr. Pringle (No. 10,016) have the young cones of the first year attached to them. It is essential to a proper understanding of these specimens that this fact be borne in mind. The size of the young cones and their apparent lateral position would naturally suggest a growth of the second season.

There is a specimen of this Pine in the Zuccarini Herbarium at Munich, collected by Karwinski "in imperio Mexicano," but with no other locality and with no date. As Karwinski's last voyage was in the early forties, the specimen must be over sixty years old. Its catalogue number is 519, and it is classified by Zuccarini with his species P. cembroides. *George Russell Shaw, Boston, U.S.*

THE FERNERY.

BLECHNUM SPICANT VARIEGATED.

This variety of British Fern has not been recorded in any of the Fern books as having been previously found by anyone except the writer, who discovered it on the Mourne range of mountains in Co. Down, first at Rostrevor in 1876, and again in 1885 and 1904 at Newcastle. It may therefore be considered as exceedingly rare.

The writer, accompanied by Mr. W. Porter, made an excursion to the Mourne Mountains on April 22, 1905, specially to hunt among Blechnum spicant which grows there in abundance. After a rapid railway journey to Newcastle, they walked to Bloody Bridge, and ascended the mountain at Glen Fofany about 300 feet, working along the slopes towards Newcastle, closely examining everything they saw. Several very good forms were observed, such as crispate, trinerved, pectinate and multifid. But the reward of their labour came later on, when on the way to the railway station, walking together, the keen eyes of Mr. Porter detected a fine plant of Blechnum spicant, beautifully variegated.

On examining it carefully, it became evident they had indeed been fortunate in finding a great prize. It was dug out tenderly, and after careful packing so as to avoid damage, the botanists proceeded on their homeward way rejoicing.

The fronds, about thirty in number, were of normal outline; length, 14 inches; breadth, 1¼ inch; the colour a dark-green with diagonal yellow stripes running from the midrib of the pinnules to the margin, sharply defined. This plant was growing by itself in a large clump quite separate from the surrounding normal forms. *W. H. Phillips, President of the British Pteridological Society, and President Belfast Naturalists' Field Club.*

ANEMONE NEMOROSA.

We all know and appreciate the exquisite Wood Anemone. It is one of those accommodating plants that does as well in many gardens as in woods and meadows. Rosarians will doubtless be horrified to learn that in a garden we know the Anemone found its way into a Rose-bed, and thrives so well while the Roses are asleep that we have never had the heart to dislodge it. There is a double form which is not uncommon, but though of great botanical interest, it will not, for all its larger flowers, compete with the single form.* Recently Mr. W. Marshall was good enough to send us flowers of a variety growing in his woods at Bexley which is a veritable little gem. It is a double flower, with the supernumerary petals so neatly disposed as to disarm all prejudice such as some people feel as to double flowers. The outer flower-segments were normal; within them, but almost quite concealed, were stamens, some perfect, some distorted. The centre of the flower was occupied by a rosette of "quill"-like white petals with slightly incurved edges, which represent the pistils. The whole formed such a charming little flower that we sent it off at once to Mr. Worthington Smith to draw for us (see fig. 128).

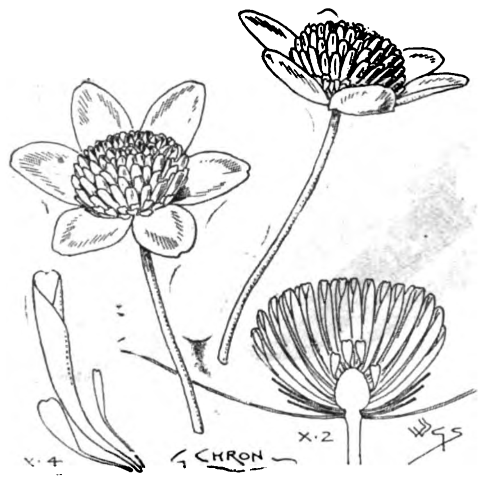


Fig. 128.—Anemone nemorosa variety.

The Eckford Testimonial.—The secretary announces the receipt up to May 13 of 704 shillings, and states that the *Florists' Exchange* has opened a subscription list in America on behalf of the Fund.

BOOK NOTICE.

Manual of the Trees of North America (exclusive of Mexico). By Charles Sprague Sargent. (Boston and New York: Houghton, Mifflin & Co.). 1905. 8¾ × 5¾. Pages 826, figures 642.

Those who know and have occasion to make use of the monumental *Silva of North America* will rejoice that its author has considered the necessities of the great body of tree-lovers, to whom the acquisition of the fourteen copiously-illustrated quarto volumes of the "Silva" is a matter for solicitude rather than for realisation.

The present volume contains in a compact form a digest of all that is generally known concerning the trees of the United States, from Canada to Florida, from the Atlantic to the Pacific. The arrangement followed is that of Engler and Prantl, which is most in accordance with what is now known as the genetic sequence of the various families of plants. The numerous gaps entailed by the omission of other families than those producing trees or shrubs, of course, interfere with the presumed line of pedigree; but in a book of this character, intended for practical use rather than for transcendental speculation, provided the requirements of the student are met, the arrangement of the material is of relatively little consequence.

What we have is, first of all, a very brief synopsis of the several families, sixty-one in number, beginning with the Conifers and ending with the Caprifoils. This is followed by an analytical key to the families based upon the leaf-characters. The value of this table can only be gauged by actual use. It has every appearance of being most carefully and accurately drawn up, but none know better than those who have had to construct similar tables how many pitfalls there are, and how the next batch of specimens may upset the careful elaboration based on the comparison of those previously examined. This is of course inevitable. No harm will arise if the student is made to realise the difficulty, and to use the table only as a suggestive guide, or, as we might term it, as an unrevised proof subject to revision as further knowledge becomes available. Who, for instance, could frame a table which should satisfactorily include all the leaf-variations of the Araliaceæ? This illustration, by the way, would not apply to the United States, whence but one species of this order is recorded, but nevertheless it will serve to exemplify our meaning.

After the analytical table to which we have referred, we come to the more detailed account of the several genera and species. Each species is described and figured. Allusion is made to its timber-producing properties, or to any other circumstance which may render its cultivation desirable. No synonyms and no bibliographical references are given. Reference to the "Silva" is even omitted, which is unfortunate, for that book supplies references which form a valuable feature, and are of great assistance to the student.

The geographical distribution of the several species is sketched with that masterly grasp and precision which is the despair of those not so familiar as is Professor Sargent with the details of the geographical botany of his native country. So many Pines, Oaks, Walnuts, Maples, and other trees, both from the North-eastern and from the North-western States of the Union, are now cultivated in this country, that this book will be particularly useful to those who are planting for effect or for practical utility. The extraordinary richness of the United States in trees of various kinds is illustrated by the fact that nearly fifty Oaks are described under the unfamiliar heading of "Fagaceæ." There are also enumerated thirteen kinds of Maples, sixteen Ashes, eighteen species of Prunus, and no fewer than 132 species of Cratægus.

The task of recognising and of differentiating the species of Cratægus might appal even a student of Brambles or Hieracia. To assist him they are here classified under eighteen different sections, and illustrations by Mr. Faxon will materially lessen the difficulties of determination.

---

* See A. P. de Candolle, *Organog. Végétal.*, tom. ii., p. 277, t. 35 (1817); Penzig, *Plant. Teratol.*, vol. i. (1890), p. 176; *Garden*, xxxii., p. 618; Masters' *Pflanzen Teratologie*, ed. von Udo Dammer, p. 294, &c.

A glossary and a copious index complete a volume which will be absolutely indispensable to all those interested in any way in the trees of North America.

THE WARREN, HAYES, KENT.

WHEN paying a visit to Mr. Blick at the well-known gardens of Martin Smith, Esq., recently, I was impressed by the smart appearance and methodical keeping observable in the various departments. When writing of The Warren I shall be expected to say something about Carnations, but there are other good things there also. A long border of herbaceous plants, in which were some scores of clumps of the double Arabis planted at intervals, was by far the finest exhibition of this plant I have seen. These clumps had each from 60 to 100 spikes of flowers. Between these clumps was a pretty dark-coloured Aubrietia in the way of A. deltoides, and the effect was gorgeous. There were also large clumps of Doronicum, Anemones, Pansies, Tulips, Polyanthus, &c. In the kitchen-garden, by the edge of the trimly-kept walks, was an abundance of flowers, notably a very fine border of Polyanthus, in which all the best varieties of Messrs. Douglas & Mortimer's celebrated strains were included. Other walks were bounded by double and single-flowered Wallflowers and Myosotis, all of which were extra good. The fruit-trees appeared in perfect condition. In the early vineries, which are lofty three-quarter-span-roofed structures, were good crops of Grapes, and a fine batch of pot Figs. The varieties Negro Largo and Brown Turkey are highly appreciated here. Bourjassotte Grise, Brown Ischia, Villette Sepia, and other varieties were also showing good crops in another house.

Muscat Grapes promise well. The back wall of the house containing these Vines is utilised for growing Asparagus plumosus. In the succeeding house, containing various late varieties of Grapes, some very large bunches were showing of such varieties as Black Alicante, Gros Colmar, Appley Towers, &c. On the back wall here were Roses—W. A. Richardson, Niphetos, &c.

In a greenhouse were some blue-flowered Hydrangeas, and other species of plants. The adjoining house contained a fine batch of Royal Sovereign Strawberries, and a good crop of Tomatos in pots. In another house were Melons on the one side and Cucumbers on the other, all in excellent condition. Melons are a very prominent feature, and are cultivated in several houses. Some of the earliest fruits will soon be ripe. Royal George is a fortnight earlier than any other variety; it is a fine-looking Melon, after the type of Earl's Favourite. Ringleader, Hero of Lockinge, Blenheim Orange, and a seedling were the other varieties. In each of these houses good batches of Strawberries were on the shelves over the centre path. Strawberries for succession filled two more houses, and I noticed the latest batch outside. In the frames were nearly a thousand Chrysanthemum plants, and in other pits and frames were zonal and fancy Pelargoniums, Potatos, Carrots, &c.

In an orchard-house there was a good set of Plums and Cherries in pots; also Apples, of which sorts I noticed Cox's Orange Pippin, Blenheim Pippin, Emperor Alexander. A fine batch of Carnations—Mrs. Martin Smith, Cecilia, Lady Hermione (which is a perfect flower, and one of the very best that has been raised here), Sarah Bernhardt, Baldwin, Horace Hutchinson, Lady Rose, and Nautilus—were also in bloom.

In another house Rivers' Early Nectarines in pots would be ripe after a few days. There were also more Carnations, of which Princess of Wales was flowering well.

In another large house there were 20,000 seedling Carnations; and raised high above these, on pedestals, were Cherry-trees ripening their fruits. Guigne d'Annonay, Early Rivers, Bigarreau de Schreken, B. Noir de Luben, Black Tartarian, Bigarreau Ludwigs, and Bedford Prolific were among the best.

There was a good crop of Apricots in another house, and these trees, I was informed, had not failed to give satisfactory crops for fourteen years. In this house were also large quantities of flowers set out on either side of the broad walk; these included excellent Schizanthus and Pæonies. The Pear-trees in pots had just been turned outside and given the protection of wire-netting and canvas.

A fine collection of Auriculas filled one house, and judging by the successful way these are being cultivated we shall hear more about them another season. The frames adjacent to the Carnation-houses were filled with thousands of strong plants. The lawns and shrubs and Roses appeared in the best possible condition. *W. A. Cook, Shirley House, Surrey.*

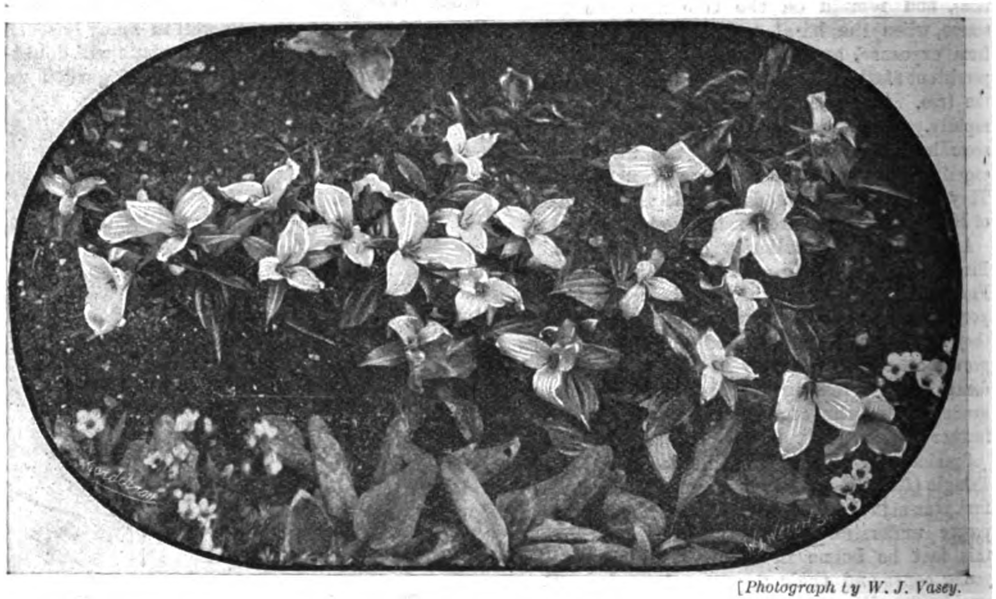

[Photograph by W. J. Vasey.

FIG. 129.—A CLUMP OF TRILLIUM GRANDIFLORUM: FLOWERS PURE WHITE.

TRILLIUM GRANDIFLORUM.

THIS plant is a native of North America, where it abounds in the woods from Quebec to Florida. It is a singularly handsome plant, and one that is easily grown in the rock-garden or in the wild pleasure grounds, where it requires a moist sheltered position. If placed in too sunny or exposed position, the large soft green leaves will not develop properly. A deep, well-drained bed of peaty soil is the most suitable medium in which to grow the plants, which may be increased rather slowly by dividing the roots, or by seeds.

Trillium grandiflorum is the best species of the genus for garden purposes, and is worthy a place in any collection of hardy plants. The white flowers are produced solitary, and have sometimes a somewhat pendulous habit. The name Trillium alludes to the parts of the flowers and the leaves being in whorls of threes or multiples of that number. The species flowers during the present month, and is now in bloom in the rock-garden at Kew with the purple-petalled T. sessile and others.

IRIS KÆMPFERI AND OTHER BOG PLANTS.

IT is not generally known with what ease these beautiful plants can be grown. Anyone possessing a garden of the meanest order can grow them, provided the plants are supplied with abundance of water during their growing and flowering seasons. The dampest part of the garden should be selected for their culture, and they must be planted in rich, well-prepared ground.

At Aston Rowant we grow them in the water close to the lake's bank, where they are planted in triangular boxes formed of two pieces of stout thick Elm or Oak, protruding from the bank in the shape of a ∧ and fastened at the apex of the triangle by a stout square stake driven into the bottom of the lake, which at the edges is only about 2 feet deep. The bank itself forms the third side of the triangle. These boxes project about 6 inches above the water-line, and are from 18 inches to 2 feet in depth. To prevent the soil from being washed from under the Iris roots, the bottoms of the triangular boxes are covered with rough flints, on which is placed a layer of turves with the grass side downward, the remaining space being filled with a compost composed of three parts rotten manure and one part of loam.

When thus planted these Iris require but little attention—we merely keep the boxes free from weeds and make an application of a heavy dressing of rich cow-manure each autumn. Immediately in front of these Iris on the grass close to the water's edge are planted clumps of Narcissus and English Iris.

In the early months of the year clumps of Snowdrops embellish the spot with their delicate flowers, to be outvied later by the glorious whites and yellows of the nodding Narcissus, with a good companionship in our lovely native Primrose.

But the beauty of these heralds of spring passes away, the silvery-white Gardenia-flowered Narcissus being the last to follow. After these have all departed we wait and watch, and presently see the beautiful Iris Kæmpferi pushing up their flower-shafts or spears, making great haste to captivate in turn the admiration so recently bestowed on their predecessors. After furnishing the lake-side with beauty for a space of from six to eight weeks these, too, are over, and our thoughts revert to the beauty of the

Iris gardens in Japan, whence our stock of about 300 plants was imported direct, with the mystical names which are quite a conundrum to all excepting those versed in the language. It would be interesting to know what the words Koki-no-ero, Shigar-no-ura-nami, Tsurugi-no-mai, &c., as they are labelled, mean.

The flower-stalks are removed immediately after flowering, in order that the seed-vessels may not weaken the plants. The dark-green spear-shaped leaves remain and form an excellent boundary between the greensward of the lawn and what is a still further attraction—the beautiful Nymphæas planted one to two yards away; these flower abundantly in water scarcely knee-deep. N. Laydekeri lilacea, with its beautiful lilac-and-carmine flowers, at once strikes the eye of the observer. Other varieties up and down the lake are all bursting forth in their glorious attire, including N. Laydekeri rosea, N. aurora, N. sulphurea, N. Richardsoni, and the enormous white N. Gladstoni. The sacred Lotus of Japan, Nelumbium speciosum, was given a favoured spot near, but after one feeble attempt to raise its head above water it sank into its aquatic surroundings. I fear the water was too cold for it. *W. H. Clarke, Aston Rowant Gardens, Oxon.*

FRUIT REGISTER.

PEAR PIUS X.

THIS is a new Pear raised by the Frères Alexiens, at Tirlemont, Belgium. The tree is said to be very prolific, the fruits are large, somewhat cylindric, greenish-olive, with a few brown spots; flesh creamy-white, perfumed. The Pear ripens in October and is said to be of first-rate quality. It is illustrated in the *Bulletin d'Arboriculture*, &c., for April.

NARCISSI FROM CORK.

To Messrs. W. B. Hartland & Sons, of Cork, we are indebted for specimens of various Narcissi, among them two new varieties raised at Ard Cairn, of which we are able to give illustrations.

PELOPS is one of the Burbidge section, with flowers 4 inches across the segments, spreading, somewhat revolute at the margins; pale lemon-yellow becoming white; cup ¼ inch deep, rich yellow broadly edged with orange.

NECTARINE would be classed in the Leeds section. The flowers are 3½-inches across, ivory-white; the cup is ¾-inch in depth, and of the colour of a Tangierine Orange; the reddish colour is probably an endowment derived from a cross with N. poetarum. Mr. Hartland has been for some years endeavouring to secure this result, and his patience has been rewarded, for the flower is very beautiful.

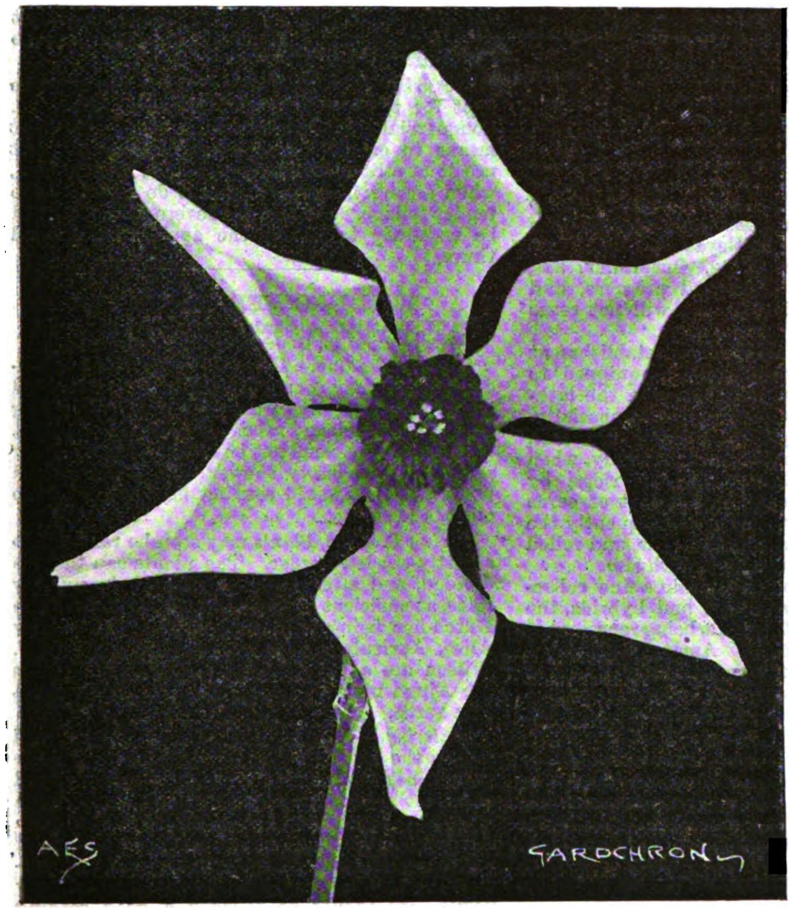


FIG. 130.—NARCISSUS "PELOPS": FLOWERS IVORY-WHITE; CUP YELLOW WITH A DARKER EDGE.

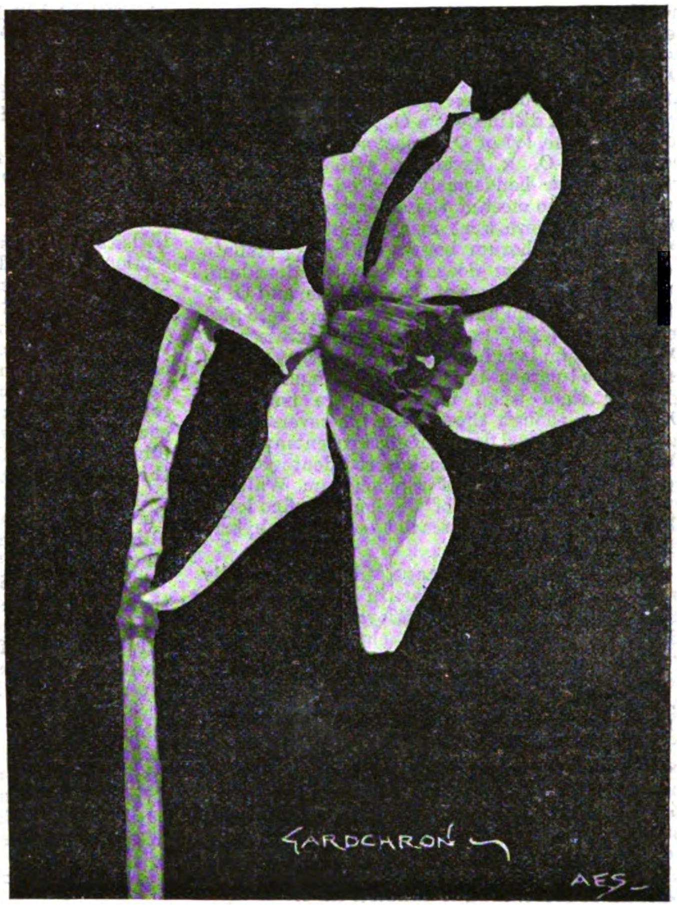


FIG. 131.—NARCISSUS "NECTARINE": FLOWERS IVORY-WHITE; CUP CYLINDRIC PLICATE, OF DEEP ORANGE COLOUR.

ORCHID NOTES AND GLEANINGS.

MESSRS. CHARLESWORTH & CO.'S COLLECTION.

ONE of the consequences of phenomenal success in modern trade horticultural establishments is the necessity for providing accommodation for the ever-increasing number of plants cultivated, and the great Orchid establishment of Messrs. Charlesworth & Co. has had to follow the rule. The original space beside the reservoir at Heaton, Bradford, was soon covered with glass; another site acquired on higher ground shared the same fate; an establishment was started on the South Coast (Sussex), and still there is a desire for fresh territory to cover with glass structures to be filled with the popular Odontoglossums and the endless and already bewildering hybrid Orchids, the production of which Mr. J Charlesworth has made his chief study.

But although most of the houses are filled with well-grown hybrid Cattleyas, Lælio-Cattleyas, and Odontoglossums, interest in the species and in importing new and rare Orchids is still maintained. Considerable space is devoted to Cattleya Mendeli, C. Schröderæ, C. Trianæ, and other large-flowering Cattleyas and Lælias, of which there are great quantities of fine plants in sheath and bud; also to Oncidium macranthum (of which a quantity of vigorous plants have strong flower-spikes), O. varicosum, and the rest of the cool-house Oncidiums, and, generally speaking, to selections of all the best of the showy species. Some time ago a large Phalænopsis-house was started and filled chiefly with P. Schilleriana, which made a fine show when in flower, a photograph of the house being reproduced in the *Gardeners' Chronicle*, March 4, p. 131. These are still in fine condition, and giving promise of an even better show of flowers than previously. But the new Phalænopsis Rimestadtiana, the highest type of the amabilis section, commonly called P. grandiflora Rimestadtiana, having been found to be easier to cultivate, and to require a much cooler house than the other species, a large importation of this was made. The new arrivals consist of some ten thousand specimens of all sizes, and now occupy the tolerably cool house prepared for them. Mr. Rimestadt, the collector, urged from the first that his Phalænopsis should be cultivated in a cool house, and his notes on the subject, together with illustrations of the plants, were published in the *Gardeners' Chronicle* at the time of the advent of this variety. It is evidently a grand florist's flower, worthy of being grown in quantity. Other new importations, including Phalænopsis Aphrodite, and some unrecognised species, also Cœlogyne pandurata, arrived at the same time. But probably the finest of the importation is a new Dendrobium of the habit of D. Phalænopsis, of which the collector says, "I found it on a remote island in the Indian Archipelago; have seen it in bloom; the flowers are absolutely pure white, similar in size and shape to those of D. Phalænopsis, and borne in a similar manner. It is much more floriferous than thats pecies; the flowers last six weeks in perfection." The island was carefully searched, but only twenty plants were found.

In the many houses devoted to them there are thousands of vigorous examples of the best type of Odontoglossum crispum and the other showy Odontoglossums. Of the more recent importations the greater part are unflowered, and some are flowering for the first time, among them being a few promising spotted forms. Of the most interesting things in these long cool-houses noted were a fine lot of Odontoglossum × Adrianæ, several of which, having a white ground spotted with purple colour, approached very closely to O. crispum. There were good O. Hunnewellianum, and two rather singular hybrids of it which seemed distinct from O. × Adrianæ. Then followed a fine lot of O. Pescatorei, with several home-raised O. × excellens, with rich yellow ground colour handsomely marked with purple, and superior to most of the imported forms. Of O. cirrosum there were many plants in flower; O. × dicranophorum bore a spike of stellate yellow-and-brown flowers; O. × mirandum, O. Lindeni, good forms of O. × Rolfeæ, and O. × Harryano-crispum and its reverse cross were also in bloom. With regard to these crosses of O. Harryanum it is found that when that species is the seed-parent the plants are much freer-growing than when the seeds are borne on O. crispum, though those from the reverse cross have finer-coloured flowers if good parents are used. Others in bloom in this block were Odontoglossum × elegantius, a batch of Epidendrum Wallisii, and at the end of one of the houses a fine lot of the taller orange-and-scarlet coloured hybrid Epidendrums.

In the intermediate-range, filled principally with Cattleyas and Lælias in bloom, were a number of hybrid Brasso-Cattleyas, the handsome Brassia brachiata, a good show of Miltonia vexillaria and M. × Bleuana, together with several nice plants of the rare M. Schröderiana; a good lot of Cattleya Schröderiana, a batch of Lælio-Cattleya × Mercia and L.-C. × Andromeda varying much in colour; brightly-coloured L.-C. × Hyeana, and other Lælio-Cattleyas; Zygopetalum × Perrenoudii, and the dark-coloured Z. Protheroeanum of gardens; a healthy batch of crosses of Sophronitis grandiflora, some of which seem to be always in flower; and a large number of the best forms of Cypripedium insigne, many of them of the C. insigne Sanderæ class.

Another house had a general collection of intermediate-house plants, a good batch of Odontoglossum Uro-Skinneri, and some others being in bloom. Suspended overhead was a collection of Pleurothallis and other Orchids of botanical interest.

In one house was a collection of Masdevallias—M. Pourbaixii and the handsome M. Schröderiana being in bloom; also good examples of the scarlet Cochlioda Noezliana, a fine lot of Trichopilia suavis, the batch of which now commencing to bloom is expected to continue to afford flowers until November. Oncidium cheirophorum, O. ornithorhynchum and its pure white variety O. hastilabium, some Maxillarias, &c., were also noted.

In the warm-houses, in addition to the fine lot of Phalænopsis previously alluded to, were noted a small importation of the large form of Pachystoma Thompsonianum, a number of pretty Cirropetalums and Bulbophyllums, some species of Angræcums, including strong-flowering specimens of A. sesquipedale and the trailing A. imbricatum, a very fragrant, white species. This plant was recently erroneously named Saccolabium Barbeyæ. There are also large specimens of Vanda Amesiana, V. Kimballiana, and small ones of the hybrid V. Moorei, and a small collection of Anæctochili.

Other houses are filled with a grand lot of hybrid Brasso-Cattleyas, Cattleyas, and Lælio-Cattleyas, batches of several of the showier kinds being in bloom. None but the best procurable species have been used as parents, and the field of primary crosses of showy species and albinos being nearly worked out at Messrs. Charlesworth's, the greater part of the energies of the firm are being directed to Odontoglossums, and to the intercrossing of fine varieties of hybrids already obtained. Some very richly marked and handsome Odontoglossums are already in bloom, and those in bud give great promise.

At the end of each of the long houses there was a number of Orchids in bloom, and one of the most interesting, though not the most showy, was a group of Epi-Cattleyas, Epi-Lælias and other singular crosses.

In the new department, at a short distance away, the raising and development of hybrid novelties and showy kinds is carried on in the most careful manner, and several houses are devoted to the plants from the earliest stage until they are large enough to take their place among the adult specimens.

In the houses containing mature plants was a good display of Lælio-Cattleyas and Odontoglossums, including a selection of fine forms of O. crispum named and unnamed. One spotted form flowering for the first time was of the O. c. Grace Ruby type, and another had very large white flowers with chrome-yellow disc to the lip and light-orange blotch. There is also a vigorous little batch of albino Cattleyas of the labiata section. Hybrid Trichopilias, Oncidiums, and other species are making good progress, and certainly the interest in the work will not cease for want of material.

Every operation in this model establishment is carried out methodically, and equipped to be as self-contained as possible, even the lath-roller blinds being made on the place by specially-constructed machinery. Respecting the lath blinds, it should be noted that formerly, when they used to be rolled up to the ridge by cords, the wear and tear and the cost of cords were found to be very great. Consequently the blinds are now made in short lengths, and rolled on and off in sections running lengthwise.

The Cypripedium-houses contain a fine collection of rare species, varieties, and hybrids, the large sections, such as C. insigne, being represented only by plants of that class. Among those noted were C. callosum Sanderæ, C. Lawrenceanum Hyeanum, C. × Maudiæ, quite equal in beauty to either of those of its class; C. Charlesworthii album, and a new species, C. Crawshayæ, collected in the same region, but which until lately did not make much progress. In the Cypripediums, as with other hybrids at Heaton, much attention is given to secondary crosses, and with good promise so far as the matter has been tested.

The Week's Work.

THE HARDY FRUIT GARDEN.

By W. H. CLARKE, Gardener to Sir WILLIAM PLOWDEN, Aston Rowant House, Oxon.

Hardy Vines.—On warm, sunny walls in southern districts the Vines will have commenced to grow, and disbudding should be performed as soon as it can be seen which shoots are carrying the best bunches, for these must be retained and the remainder rubbed off, unless the spurs are at considerable distances apart, when two shoots may be retained. These shoots should be stopped two leaves beyond the fruit, allowing one bunch of fruit on each. Keep the sublaterals closely stopped, and if the Vines are growing in a hot, dry situation, afford frequent applications of liquid manure.

Morello Cherries.—On a wall 100 yards in length planted with trees of the Morello Cherry, the wealth and size of bloom at the present time are equal to those of many of the ornamental varieties. The Morello has a habit of casting a certain number of its fruits, and this prevents the tree from becoming over-burdened. Examine the trees at the present time, and pinch back or, better still, remove all the shoots which will not be required for laying in. This will prevent any over-crowding of the branches when the fruit is ripening. The Morello Cherry requires similar treatment to that afforded Peach-trees, except that more shoots should be retained for laying in.

Plums, Dessert-Cherries, and Pears.—Many varieties of these are now making abundant growth. In some cases four to six shoots are growing from one spur, which is far too many. On Cherry-trees these growths may be pinched back to about four leaves, which will result in the formation of fruit-spurs. On Plum and Pear-trees a general thinning is necessary, leaving two or three growths in a position that will furnish fruit-bearing wood as near to the main branches as possible. Those shoots not required may be removed at this date by a slight twist with the finger and thumb.

Affording Water.—In consequence of the dry weather experienced during the past three weeks, wall-trees having passed their flowering stage may require water. Those growing on light, sandy soils may advantageously be given a good watering with liquid-manure, taking care that sufficient is afforded to soak down to the extremities of the roots.

Cleansing from Pests.—A diligent eye must be kept for the appearance of black and green fly. Commercial Quassia-extract is probably the best means to employ to eradicate these pests, but use it at a little under strength at this season, when strong insecticides would do harm to the tender foliage. If there are severe attacks it will be necessary to repeat the application several times.

THE FLOWER GARDEN.

By W. A. MILLER, Gardener to Lord HENRY C. BENTINCK, M.P., Underley Hall, Westmoreland.

Summer Bedding.—The planting of tender bedding plants may soon be commenced. Have all the beds made ready by thoroughly disintegrating the soil with fork and rake to get a friable surface, which, however, need not be reduced too finely, or after the first heavy shower a hard crust will be formed that would conduct heat and moisture out of the soil.

Spring Bedding Plants may soon be removed to a partly-shaded border. The plants can then be divided, and afterwards be planted in nursery lines, at sufficient distances apart to allow of the Dutch-hoe being worked between them. Daisy Alice, Auricula Alexandra, and Primrose G. F. Wilson are a worthy trio. Other useful plants are Ajuga reptans, Arabis fl.-pl., and Valeriana Phu aurea.

Watering.—Freshly-transplanted trees will require the first attention. Have "saucers" made in readiness by putting a ridge of adhesive soil at about 3 feet from the stem. A thorough drenching of the soil once a week is better than daily driblets. The application of a mulch of rotten manure will afford nourishment and prevent excessive evaporation. If the weather is dry flower-beds should be afforded a good soaking with water directly they have been planted. Loosen the surface soil with the dutch hoe on the next day after applying water, as a caked surface must not be permitted to remain.

Lobelia, Hollyhocks, and Sweet Peas.—Plants of scarlet Lobelia, treated as described in former Calendars, are now ready for planting. Plant the clumps closely together so as to form a compact mass of flower-spikes, and afford them very liberal treatment. Hollyhocks obtained from early sown seeds, and that are properly hardened-off can be planted soon in good loamy soil that has been heavily manured. If possible choose a moderately exposed position, for when planted at the back of borders, the plants are apt to get drawn and become more liable to an attack of the fungus Puccinia malvacearum. Sweet Peas raised from late sowings in pots must now be planted-out and afforded twiggy shoots to support the slender growths.

Affording Stakes.—This work will need the exercise of forethought, taste, and a knowledge of the habits of plants. Such subjects as Phloxes, that have numerous shoots, may have a string put round them to steady the growths until they are long enough for sticks. Thin out the weakly shoots. Do not have the clumps of too large a size, and be careful to use as many sticks as may be necessary. Never allow the plants to become bent and crooked, as no subsequent treatment will make them as effective as they would otherwise have been. Avoid the bunching or besom-like method, and use stakes of such a length that when the plants are in flower the supports will be hidden, or at least inconspicuous. Green stakes are the best for general use, and spiral wires are admirable supports for Carnations.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Peas.—Prepare the ground for late crops of Peas as for Celery, and sow such varieties as Autocrat. Owing to the exceedingly robust and remarkable branching habit of this variety it is necessary to sow the seeds much more thinly than is generally done, or the consequence will be that the plants will choke each other. I have grown this variety yearly since its introduction, and it has never disappointed me, being the best late variety. Autocrat grows 4 feet in height, continues to bear well-filled dark-green pods for a long time, and is seldom if ever attacked by mildew. The Gladstone Pea is a fine and prolific late variety, bearing long, sickle-shaped pods. It is a first-class exhibition variety, height 3½ feet. Succession Peas that were raised in pots may now be removed from under glass. Plunge the pots in some light material in a sheltered warm corner, and give close attention to watering the plants with frequent applications of liquid-manure. Should it be desired to obtain large and handsome pods, pinch the tops off the plants and reduce the number of pods on each plant.

Endive.—Seeds may be sown at intervals of a month until the end of August. While the weather is hot and dry the earliest batches should be sown thinly in drills drawn 1 foot or 15 inches apart, allowing the plants to mature without transplanting them. This will help to prevent their running to seed. Thin the plants out to 1 foot or 15 inches apart. Broad-leaved Batavian and Green Curled are the varieties generally grown.

Onions.—Plants raised early and transplanted will now be growing freely. Slightly stir the surface soil with the Dutch-hoe. Afford the plants light and frequent waterings; and if only hard water is to be had, the addition of some washing soda will make it more suitable to the roots. If the revolving sprayer is used, as is the case here, grind the soda to a fine powder and sprinkle it over the ground previous to watering.

Broad Beans.—Sow seeds now and again after a month has elapsed for late crops. Broad Beans require deep cultivation, a liberal supply of manure, and a change of ground each season. Use the hoe freely between the rows of plants, and when the plants are 2 or 3 inches above the ground draw the earth up to them on each side. When the growths are from 2 to 3 feet in height, pinch out the tops with the finger and thumb to assist the early maturing of the pods. It is often the means of preventing the early development of black-fly, that common enemy of the Bean. Let the plants be afforded plenty of room to grow sturdily, and thus become self-supporting. Carter's Green Leviathan, Beck's Dwarf Green Gem, and Improved Green Windsor are excellent varieties of this vegetable.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Early Vines.—The Grapes in the earliest house will now be colouring, and in some instances ripe. Warm diluted liquid-manure may still be afforded to Vines that are cropping heavily, or if there is any doubt as to their finishing properly. Plenty of time must be allowed to obtain the much desired "bloom" on the berries. Maintain a constant circulation of warm air with less atmospheric moisture. The temperature at night may be reduced, allowing it to fall to 60° in the morning. Admit more air at night than formerly whenever the weather is favourable. In order to maintain ripe Grapes in a good condition, a cool and comparatively dry atmosphere will be necessary, but the roots must not be permitted to suffer for want of water. If an application of water becomes necessary owing to keeping the Grapes hanging for a long time on the Vines, let the work be carried out on a bright morning. Examine the foliage for red-spider, and endeavour to keep the pest in check by carefully sponging the leaves on its first appearance rather than by applying sulphur on the pipes, which is always dangerous unless extra care is afterwards given to the ventilation of the house early in the morning. When the Grapes have been cut, thoroughly syringe and cleanse the foliage of the Vines, and supply the border liberally with water, using liquid manure occasionally.

Succession Vines.—Pay attention to the tying of shoots and stopping of laterals as growth proceeds, and apply liberal supplies of liquid manure, also sprinklings of Kirk's or some other approved Vine-manure to Vines that are swelling their fruit. Close the houses early in the afternoon, with abundant moisture in them, allowing the temperature to increase afterwards to 85° or 90°. Admit a little air again for the night at about 8 P.M. Stir up the fires early in the afternoon to such a degree that the temperature in the houses will fall gradually until 10 P.M. Early in the morning it should be at about 65°. Tie up the bunches of fruit if necessary, and carefully remove any seedless berries which have been overlooked previously. Early plants of Muscats require similar treatment, excepting that the temperature should be 5° higher than is recommended for Black Hamburghs.

Later Vines.—Maintain a constant circulation of moderately dry air in houses in which the Vines are coming into flower, and the temperature may now be a little higher at night and by day. Remove all surplus bunches of fruit as soon as they have set, and thin all free-setting varieties, such as Black Alicante, as soon as is possible. Defer the thinning of Muscats until it can be seen which berries will swell best. Laterals should not be pinched during the time the vines are in flower, but they may be stopped directly afterwards and the shoots tied down as carefully and as evenly as possible to cover all parts of the trellis. Afford the border a light mulching as soon as the bunches have been thinned, and pay daily attention to damping and watering of the borders. Such varieties as Muscat of Alexandria and Lady Downes', or any Vines that are weak, should be provided with slight shade from the sun's rays. Lady Downes', being subject to scalding, should not be shut up very early in the afternoon, and a small amount of air should be always admitted to the house during the night.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Lycaste Skinneri.—When the new growths are about an inch long, the plants should either be re-surfaced or repotted. The latter operation should only be adopted when the pot is unsuitably large or too small, or when the drainage is in an imperfect condition. The pots should be half filled with drainage material, and a compost used of equal parts of good fibrous loam, peat, sphagnum-moss, with the addition of a "dash" of coarse silver sand. Stage the plants in a moderately light part of an intermediate-house, and afford them little water until the roots are growing freely. A good supply will be needed until the pseudo-bulbs have formed, but it should be gradually diminished afterwards.

Summer Quarters.—In a mixed collection of Orchids there are many plants which need a different position during the summer season to that which they occupy in the winter months, and they should be moved before the difference of the one season from the other becomes extreme. The plants of the "Chimæra" section of Masdevallia, which in the winter months are usually placed in more warmth than is afforded Masdevallias generally, may now be replaced. These plants are grown in baskets without drainage material, and should any plants need fresh surface materials these may now be afforded them. Afford shade from strong light, keep the materials well moistened, and have the leaves of the plants sponged frequently. Miltonia vexillaria varieties which develop their growths and floral spikes in a Cattleya-house may, now they are in bloom, be removed to a cool intermediate compartment where drier conditions should be maintained for the better preservation of the flowers and to check the development of new growth. The plants need a moderate supply of water until the flowers have passed, but afterwards they may be kept moderately dry; at the same time dampings between the pots and overhead sprayings will be necessary several times a day. The Pleiones—other than P. Wallichiana, which grows best in the Cattleya-house throughout the year—have to be kept rather cool and dry until the present month. They should now be placed in an intermediate-house where there are more light and heat. The plants will require larger quantities of water afforded more frequently. Platyclinis glumacea having completed its leaves and tiny bulbs should be placed in a light part of an intermediate-house, and the supply of water may be gradually diminished. There are numerous plants whose present requirements may be easily determined by the presence or absence of growth, and these should be treated either with a view of encouraging growth or of inducing rest.

Odontoglossum hastilabium.—This stately species is now in flower. Do not allow the spikes to remain on the plants for a long time, as this would cause expansion in the pseudo-bulbs, from which they take a long time to recover. The plants require an intermediate temperature, and succeed best when planted in a leaf-mixture, being kept under comparatively dry conditions at all times, except when rooting freely. O. Uro-Skinneri is another species whose progressive spikes continue in flower for a long time. This is a cool-growing species, needing similar treatment to O. crispum. The spikes are now visible in the developing growths, and as root-action is also vigorous, a good supply of water at the base is essential.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Heat, Ventilation, and Shading.—At no period of the year are greater care and watchfulness required in the culture of plants under glass than at the present time. Warm sunny days followed by cold nights necessitate the use of considerable artificial heat, and it is therefore very important to take every precaution against attacks of thrips and red-spider. In structures containing plants that require very little ventilation, much moisture must be maintained in the atmosphere by the frequent damping of the stages, paths, &c. Shade from direct sunshine will also be necessary for most plants of this nature. Air should be admitted through the top ventilators only, and with great care, closing them again early in the afternoon before the sun has quite lost its power. Blinds made of tiffany are always preferable to the use of permanent shading.

Seedling Plants that require to be pricked-off or potted-on should be attended to, and afforded shade for several days afterwards. Examine them occasionally for traces of mite, using a small lens for the purpose. Very close inspection will be necessary to detect this pest before it has effected mischief. Employ frequent syringings with Quassia-extract, or where practicable immerse the plants in the liquid. A weekly fumigation with a nicotine compound is time and money well spent.

Cyclamens that were potted early last month have rooted freely into the new soil and will be transferred to cooler quarters. Shade them from the sun's rays, but do not employ material that is so dense that the plants under it would be likely to become drawn and weakly. A temporary frame under a north wall with a cool ash bottom is a perfect place for them during the hot summer months, and in such conditions no additional shade is needed. Seedlings will require no further potting, and much care must be exercised in affording them water.

Tuberous-rooted Begonias raised from seeds are ready to be shifted into 5-inch pots. Employ a rich compost consisting of loam and leaf-soil in equal parts, also one-third of silver-sand, and a little bone-meal. Pot the plants rather firmly, and after affording them a thorough watering, place them in a somewhat close atmosphere and shade them for several days. Air may be admitted freely again when the roots have entered the fresh compost.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER**, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

APPOINTMENTS FOR THE ENSUING WEEK.

SATURDAY, MAY 20 — International Horticultural Exhibition at Paris (9 days).

TUESDAY, MAY 23 — Royal Horticultural Society's Committees' Meeting, and National Tulip Society's Show at the Royal Horticultural Hall.

WEDNESDAY, MAY 24 — Linnean Society, Anniversary Meeting, 3 P.M. Royal Caledonian Horticultural Society's Spring Flower Show at Edinburgh (2 days).

FRIDAY, MAY 26 — Royal Botanic Society, Lecture and Meeting of Fellows.

SALES FOR THE WEEK.

WEDNESDAY NEXT—
Palms, Plants, Ferns, Liliums, Araucaria excelsa, Begonias, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY NEXT—
Imported Orchids, by order of Messrs. Sander & Sons, 300 Established Odontoglossum crispum, Established Orchids in variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —53·4°.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May* 17 (6 P.M.): Max. 71°; Min. 49°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 18 (9 A.M.): Bar., 30·2; Temp., 66°. Weather brilliantly fine.
PROVINCES.—*Wednesday, May* 17 (6 P.M.): Max. 65°, S.E. coast of England; Min. 51°, S.E. coast of Scotland.

Baron Schröder.

THE retirement from the Council of the Royal Horticultural Society of Baron Sir HENRY SCHRÖDER is an event which should not be allowed to be passed over in silence. Whilst we must regretfully acquiesce in the Baron's wishes, we must retain the warmest sense of gratitude for what he has done for the Society. To him more than to any other single individual we owe the fine Hall in which the fortnightly shows are now held; to him we are mostly indebted for the commodious meeting-rooms in which the work of the Society is carried on; to him, as the last act of generous sympathy, we owe the installation and fitting up of the Lindley Library, which at last has a home worthy of its importance. A brass tablet in the Library records, in terms of grateful appreciation, the work done by the Baron. The last meeting of the Orchid Committee afforded evidence that, although Sir HENRY feels himself debarred from taking the active part that he has hitherto done in the work of the Society, he will still continue to enrich the shows with exhibits from his particularly choice collections. Those who know the energy and zeal that the Baron has shown in the affairs of the Society, and the manner in which he has contributed to the success of its exhibitions, will heartily join with us in tendering to him thus publicly the warmest thanks of the horticultural community.

The Colours of Flowers.

WHATEVER may be thought about the disadvantages of special societies, it is a matter beyond dispute that in their own particular way they sometimes do work and accomplish results that, if left to societies dealing with horticulture in a general way, would never see the light of day. Men with special hobbies and with special abilities can only find congenial surroundings amidst like-minded *confrères*, and not in a miscellaneous crowd. The mere association with others who are like-minded draws out abilities and efforts that would otherwise lie dormant or else be crushed entirely.

The French National Chrysanthemum Society has been established ten years, and its aims and efforts certainly seem to be concentrated upon other and more important things than the mere holding of shows and the consequent disbursement of large sums of money among greedy exhibitors. In fact, its exhibitions are organised and the whole Society worked at an annual cost that would surprise some of the officials of English Chrysanthemum societies.

Not long ago this Society published a capital little treatise on the diseases and insect-pests that afflict the popular oriental flower, the author, Dr. J. CHIFFLOT, of Lyons, being a well-known authority on such matters. But this was not sufficient, for a very interesting coloured chart accompanied the volume, in which diagrams, true to nature, of the various diseases and insects were given, and the remedies set forth beneath each illustration. A chart of this kind should be hanging up in the greenhouse or potting-shed of every grower of the Chrysanthemum, for it is at once the easiest and simplest method to enable the inexperienced to identify any of the troubles likely to infest his plants.

The work now lying before us* is the outcome of a suggestion made at one of the Society's annual gatherings. Although primarily intended to lay down a standard of colour description for Chrysanthemums, it has been extended so as to serve for almost anything, and anybody that has to do with the defining of colours.

M. HENRI DAUTHENAY is practically the editor of the work, and has been assisted by five gentlemen of French, English, German, Italian, and Spanish nationality, viz., Messrs. MOUILLEFERT, HARMAN PAYNE, MAX LEICHTLIN, N. SEVERI and MIGUEL CORTES.

Two cases of coloured plates, each colour in four different shades, and all the plates detachable for facility of comparison with the object whose colour is to be determined, comprise the work. The explanatory text is contained in a volume of eighty-two pages, the contents of which, briefly stated, are the names of the authorities consulted and the origin of the repertory, CHEVREUL's method, the choice of names, classification of colours, instructions as to the use of the work, &c. Then follows a list of colours in numerical order, the whole work being divided into twelve series—viz., whites, yellows, orange shades, reds, pinks, purples, violets, blues, greens, browns and ochres, chestnuts, blacks, and greys. An alphabetical list of the names of colours, with the reference to the number of each plate, is given in French; another in German, a third in English, and two others in Spanish and Italian respectively, so that the repertory may be useful to a very much larger extent than if it were confined merely to French-speaking readers.

We know of nothing of the kind that has yet been published excepting a sheet of colours published by the *American Florist* ten years ago, but in that case only thirty-six colours were given, while in the French work there are three hundred and sixty-five colours named, mostly in four different shades, which must mean a gross total of something like fourteen hundred colour-variations. The classification is simple in the extreme, for, presuming we had before us a green leaf, the colour of which we wished to describe accurately, we should turn up the Section IX., "Greens," and there among the sixty-two different greens we should find one of the shades that would apply to the colour-name we required.

We take at hazard Plate 63, Abricot rougeâtre, to explain what appears on each plate. There are four oblongs, 1¼ inch by 1¾ inch, each coloured a shade darker than the other, and numbered 1, 2, 3, 4. The printed matter is as follows: Origin, one of the shades observed in the skin of the Apricot. French synonyms: Coppery-red, Capucine madder-lake. Foreign synonyms: German, Aprikosenrot; English, Reddish apricot; Spanish, Albaricoque rojizo; Italian, Albercocca rossastro. Remarks. Tone 1: Reflexion in the centre of Chrysanthemum Charles Davis. Tones 1 to 4: Different degrees of intensity in the centre of the Rose Ella May (when seen in diffused light). Tone 3: Lateral petals of an example of Lælio Cattleya Cappei. Note.—Tone 4 is identical with salmon in the chart of colours of the *American Florist*.

The work has involved an immense amount of labour, and the expense must have been considerable. It is issued by subscription at £1, and if once generally adopted by florists and others having to do with colours would obviate very much of that uncertainty that always exists when we read what are called catalogue descriptions. Our Chrysanthemum friends can still rejoice in their plum-coloured violets, lilac mauves, rosy magentas, salmon carmines, and bright fiery reds, but with this difference: that instead of each man having his own notion of what these names imply, he must by comparing his flower see that it is identical in tone with the plate bearing that name. And Dahlia-growers, Rose-growers and other admirers of popular flowers can have a standard of authority, if they choose to adopt it, which will justify in the minds of the uninitiated some of the apparent extravagance of colour description that has been the bewilderment of many of us in days gone by.

ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held on the 23rd inst., when the National Tulip Society will also hold their annual show for the southern division. Mr. E. N. HOLMES, F.L.S., will deliver a lecture on "Medicinal Plants, Old and New," which will be illustrated by lantern-slides.

LINNEAN SOCIETY.—The next meeting of the Society will be the anniversary meeting on May 24, 1905, at 3 P.M.

---

* *Répertoire de Couleurs pour aider à la détermination des couleurs des fleurs, des feuillages et des fruits*, published by the French National Chrysanthemum Society and René Oberthür. (Imprimerie Oberthür à Rennes and Librairie Horticole, 84 bis, Rue de Grenelle, Paris.)

FLOWERS IN SEASON.—Messrs. E. Webb & Sons, Wordsley, have sent us flowers of a number of varieties of stellate-flowered Cinerarias, showing very pleasing shades in red and blue colours in addition to some flowers which are quite white.

"THE RATIONAL ALMANAC."—This is a book containing in small space the opinions of Mr. M. B. Cotsworth as to the present anomalous condition of the Almanac and of the usual methods of measuring time. The author traces the evolution of our present systems from the earliest times when records were made, and would have a more "rational" system introduced. The year, in his view should be divided into thirteen months of exactly four weeks each, and the calendar should henceforth be constructed on a fixed instead of a shifting basis. How many disciples Mr. Cotsworth will attract, whether some or any of his arrangements will be adopted, time only can show, but there is no doubt as to the interest of his book, and that among the mass of information therein contained every reader will find something attractive.

THE ROYAL SOCIETY.—At the meeting for the election of Fellows held on the 11th inst., Professor F. W. Oliver, of University College, London, and Lieutenant-Colonel D. Prain, the Superintendent of the Botanic Garden, Calcutta, were elected. That two botanists out of a total of fifteen chosen from all branches of science should be selected in one year is noteworthy.

SOUTHERN CALIFORNIA ACCLIMATISING ASSOCIATION.—Dr. F. Franceschi has forwarded to us a list of the exotic plants grown by him and now ready for distribution from his garden at Montarioso, Santa Barbara. The catalogue is worth consideration, because many of the plants mentioned in it are uncommon, of great interest, and some are rare in cultivation. Correspondence respecting them should be addressed to P. O., Box 1500, Santa Barbara, Cal., U.S.A., with the name of Dr. F. Franceschi or of the Association added.

CORELESS APPLES.—It may be that the qualifications of this Apple might be appreciated more highly if those responsible for advertising it were a little more judicious in their methods of making it known. To call it a "Horticultural Wonder of the World" is at once to lower it to the level of a quack "cure-all." The owner claims that he has the "only commercial seedless Apple in existence that you can bud or graft from, and always, as a result, get trees that will produce seedless Apples. He also claims that he has the only seedless Apple of good commercial value in the world. In six months, as we learn from *American Fruits*, the United States will be covered with companies for the growth and sale of this Apple. A nursery of 60,000 trees is to be started this spring in Switzerland, "as well as a nursery of about the same number in Great Britain."

MR. J. S. GRAY, OF YORK.—"Yorkshire Gardener" writes us as follows: "Amongst the numerous horticulturists occupying responsible positions north of the Trent, few are better known than the above-named gentleman. For fifty years he has been connected with the well-known firm of York nurserymen, Messrs. James Backhouse & Sons. Age and a desire for some release from active duty have compelled him to resign the position of general manager to this firm. As a small mark of their esteem for his long service and faithful discharge of his duties, the directors of the firm recently presented Mr. Gray with a handsome silver tea and coffee service and illuminated address, to the purchase of which the principal *employés* of the firm freely added their mites. During the time he has been connected with the firm, Mr. Gray has served three generations all named James Backhouse. To each of them he paid a well-deserved tribute of respect as just and honourable employers, when thanking the present head of the firm for the handsome present that had been given him. If it were possible for Mr. Gray to write a history of Northern horticulture during the last half-century, I feel sure the result would be an interesting book for all horticulturists. The writer has had business dealings with Mr. Gray for over thirty years, and has always found him to be a strictly upright conscientious man, with a marvellous amount of general horticultural insight and knowledge."

DO VARIETIES PROPAGATED BY BUDS DEGENERATE?—We desire to call the attention of our readers to the summary of the discussion on this subject initiated by the Scientific Committee of the Royal Horticultural Society. The communications and reports have been published in full in former issues, but many will be glad to see the careful digest prepared by Mr. Chittenden, the Secretary, which is included in this number under the head of the proceedings of the Scientific Committee (see p. 318).

THE CULTIVATION OF THE MOREL.—Experiments on cultivating the Morel have been made by M. Molliard in the laboratory, and this month the results have been published in the *Comptes Rendus*. M. Molliard has succeeded in raising Morels from the spore to the perfect fungus on Apple pulp and on various nutritive matters of a similar composition to that of the Apple. He was led to make these trials by the fact that Morels frequently grow in Apple orchards and upon the refuse of the fruit. He ascertained that the mycelium (spawn) requires for its development nutriment that contains a large proportion of hydrocarbons, and that inulose, glucose, and starch are highly favourable to it. It is less exacting as regards mineral matters, but at the same time prefers phosphates, nitrates, and salts of lime or of magnesia in situations that are neutral or very slightly alkaline.

THE BRITISH GARDENERS' ASSOCIATION.—A public meeting of the British Gardeners' Association will be held in the Memorial Hall, Farringdon Street, E.C., on Thursday, June 1, at 8 P.M. Members of the Association are expected to be present in large numbers, and it is hoped that other gardeners interested will attend to hear the Report of the present Acting Committee, which will, we believe, be very encouraging to the movement. The voting papers for the election of the Executive Council have been distributed, and the result will be announced at the meeting.

KEW GUILD DINNER.—Old Kewites are reminded that the annual dinner will take place this year, as usual, on the eve of the Temple Flower Show, May 29, at the Holborn Restaurant. The meeting is announced to commence at 7.30 P.M. The Secretary, Mr. Winn, Royal Gardens, Kew, will be pleased to hear before the 22nd inst. from those members intending to be present.

GENTIANA ACAULIS ALBA.—We have received specimens of the albino form of Gentiana acaulis from Messrs. James Smith & Sons, Darley Dale Nurseries, near Matlock, who state that it was found in bloom, growing amongst a large quantity of the ordinary blue Gentianella (G. acaulis) raised from seed. It is a beautiful pure white variety, free blooming. The plants are now in full flower, and worth travelling many miles to see. The habit and growth is the same as the ordinary Gentianella.

INFLUENCE OF CLIMATE UPON VEGETATION.—In a paper contributed by M. Gaston Bonnier to a recent number of the *Comptes Rendus* (April 10), in which the author is writing of plants on the Nilghirri plain, he makes special mention of the garden at Ootacamund. This garden is situated at an elevation of some 7,475 feet, close to a meteorological observatory, so that the influence of the climatic conditions upon indigenous and cultivated plants can easily be noted. Observations of indigenous or naturalised plants, of plants acclimatised, and of cultivated plants not yet acclimatised in the Ootacamund Garden, led to the following conclusions:—The Nilghirri Plain (Southern India) is not of sufficient altitude to permit plants to develop all the characteristics of the vegetation of the alpine region, though they show certain of them. Further, the temperate climate of the Plain enables plants cultivated in our temperate countries to increase and to multiply themselves, modifying their form and structure so as to adapt themselves to the special meteorological conditions of the region. The plants at Ootacamund showed all stages of this progressive adaptation.

RAFFIA TAPE.—This is the name given to a new material for tying up plants and parcels. The name explains it character, and it should be added that it is flat and corrugated, and therefore will not twist or slip. West's Raffia tape is too soft to injure delicate plants, and is of an unobjectionable green colour. It is sent out conveniently wound on reels with a holder and hook attached, and is obtainable from seedsmen and ironmongers. For using instead of raffia for plants and instead of twine for parcels it is well worth a trial, being efficient, handy, and inexpensive.

WISE AND UNWISE PLANTING.—In tree-planting, the suitability of the species to its surroundings is rarely considered with sufficient care. Mr. D. E. Hutchins, in the April number of the *Agricultural Journal of the Cape of Good Hope*, mentions this point in his paper on "Extra-Tropical Forestry." His opinion is to the following effect: "Before you begin tree-planting, make a careful study of your climate, and obtain the best advice on climatic forestry. Do not plant the Blue Gum, a native of a wet country, in a dry climate, where it will either grow badly or suck up the water from springs, watercourses, or your garden. Do not take Eucalypts from the eastern summer rainfall of Australia and plant them in the western winter rainfall of Cape Colony; nor, *vice versâ*, the western Jarrah and Kari in the eastern summer rainfall districts of Cape Colony. Do not plant near the coast mountain trees, such as the Deodar or Wellingtonia. Every tree has its own habitat, its own peculiar air and temperature, and it is of little use attempting to plant it out of its habitat. Many trees grow fairly well as specimens in a garden, but fail in the forest, while a number will succeed for five, ten, or twenty years, and then fail. Of such are the Grevillea and many of the eastern Eucalypts in the Cape Peninsula. Others will prosper till a bad season arrives, such as the dry summers of 1897 and 1902 after wet winters in the Cape Peninsula, which killed off a heavy percentage of Cupressus macrocarpa trees; or the drought of 1900 in the eastern districts, which had more disastrous effects."

PUBLICATIONS RECEIVED.—*Journal of the Scottish Meteorological Society.* With tables for the years 1902-3. Contents: Treatment of Climatological Observations, W. N. Shaw, Sc.D.; Rainfall of the Ben Nevis Observatories, Andrew Watt, &c. Regret is naturally expressed at the closing of the Ben Nevis Observatories owing to lack of funds. Not only regret but disgust may be felt at the abandonment of this mountain station. —*Department of Agriculture of Western Australia: Annual Report to June*, 1904. "The season was good for the country generally; the Wheat yield was good. Potato-growing is still going steadily ahead."—*Bulletin of the Department of Agriculture, Jamaica*, April. Contents; Roses, by W. Jekyll; notes on Fern Culture, Discovery of Maniçoba Rubber Forests, &c.

PLANT PORTRAIT.

LOBELIA TENUIOR.—*Revue Horticole*, April 16. See *Gardeners' Chronicle*, 1901, i., 37, fig. 20. M. Mottet considers that L. ramosa, L. heterophylla, and L. coronopifolia, hort., are synonymous with this.

WALMER PLACE, NEAR DEAL.

[SEE SUPPLEMENTARY ILLUSTRATION.]

ON the south-east coast of Kent and adjoining the historic castle at Walmer, of which an illustration was given in our issue for February 18, 1905, stands Walmer Place, the subject of our supplementary illustration. It forms the residence of A. L. Ocks, Esq., who has since purchasing the estate entirely remodelled the grounds and gardens, and has converted them into one of the finest gardens in this part of the country. The mansion has also been entirely remodelled, and is now an imposing and commodious building. For how long a period this site has formed a place of residence it would be difficult to determine, but there are evidences that, even as far removed as the Roman period, some noble family had its place of abode on some portion of the estate, for when constructing new terraces and walks extensive remains of these early settlers were discovered. These relics have been placed in a suitable show-case, and form an object of interest in the hall.

The contour of the ground is such that it slopes from the north towards the south-west, and advantage has been taken of the elevated northern portion to form the site for the residence. A considerable area has here been levelled and surrounded by a beautiful terrace constructed in the Italian style, and from which the grounds and gardens proper are reached by series of ornamental steps. The plateau thus enclosed is of considerable area, and has afforded scope round the houses for the inclusion of flower-beds and borders, which in summer-time are gay with flowers and decorative plants. The balustrading is surmounted at intervals with ornamental stone vases, that are also furnished in summer-time with flowering and trailing plants. The terrace affords an uninterrupted view of the grounds and, on the east side, of the sea, where can be seen the ships lying at anchor in the Downs, also in the distance the breakers on the Goodwin Sands, and, under certain conditions, the cliffs of France are distinctly visible. The house, together with the masonry of the terrace, furnishes a good "wind-break" to the gardens, a very necessary feature, owing to their being fully exposed to the cutting winds from the north and east, which in winter and early spring-time expend their full force upon this portion of the English coast. Were it not for this protection gardening would be impossible in such an exposed situation, for even the most hardy subjects would be injured by the cutting blast. A continuation from the terrace in the form of a terrace-walk runs for a considerable length towards the south, where it terminates in a summer-house built of masonry and furnished with a tower. From the top of this may be enjoyed an excellent view of the pleasure-grounds and one of the finest seascapes obtainable on the southern coast. The pillars and balustrading of this erection are furnished with a variety of climbing plants, including a collection of Ivies. The whole of the ornamental masonry, fountains, sundials, and similar objects have been constructed by Messrs. Pulham & Sons, while Messrs. Mawson Bros., of Windermere, were responsible for the remodelling of the grounds and gardens, which has been accomplished in the "formal" style. The grounds immediately below this elevated terrace-walk are laid out as a Dutch garden, the proportions of which have been designed in good taste, in a style that is both bold and effective. A central lawn has a series of beds at either end, in which are planted specimens of clipped Yew trees, Bay Laurels, and other suitable plants. The design is strictly symmetrical, the walks being formed with mathematical precision, and terminated in most cases with either an ornamental gateway, a sundial, a flight of stone steps, or some similar garden ornament. Proceeding across the Dutch garden one arrives at the central walk, seen in the bottom picture in the supplementary illustration. This walk intersects the grounds from north to south, and terminates on the north end in an old Roman column; on the south in an ornamental pond and water-garden. This walk is flanked on either side by well-formed borders of herbaceous plants of which our illustration affords an excellent view. It will also be noticed that in consequence of the "fall" of the ground stone steps have been introduced at intervals along this walk; although not shown, there are other steps as the walk proceeds southwards, and on the top of one flight is a beautiful Spanish gateway, surmounted by a curious old weathercock—a ship in full sail. The path to the left of the sundial shown in the foreground of the bottom picture leads to a bowling-green, which is included in our view at the top of the picture.

The bowling-green is surrounded by a thick hedge, and can be entered from the opposite side by a path that winds its way beneath tall Poplars and through shrubberies, on to a sunken garden which has recently been made. The borders of this path are bright with the greater Periwinkle (Vinca major). This plant grows luxuriantly along this shady walk, and at the time of our visit was covered with its beautiful blue flowers. The Periwinkle is one of the best subjects for planting in shaded situations, being a native of woods and undergrowths. Shrubs grow well at Walmer Place. We noticed Weigela rosea, Rhododendrons in variety, Berberis Darwinii, B. Mahonia, B. vulgaris, Spiræas, Lilacs, Choisya ternata, Roses, Honeysuckles, &c., flowering well. Cytisus præcox was a splendid sight, contrasting greatly with the golden-yellow of the double Gorse. Clematis montana was also seen in its full beauty. Another feature near the bowling green is a pergola of Roses and Honeysuckles; while an avenue of Prunus Pissardi leads one to a lawn, the centre of which is occupied by a round flower-bed, at present filled with Wallflowers.

Roses have been planted with a lavish hand at Walmer Place, for in addition to numbers round the house and on the walls and pillars of the terraces, a Rose-walk has been formed at the lower end of the grounds. This is shown above the round bowling-green and running past the model farm in the top picture. Roses in thousands occupy the borders on either side of this walk, while arches at frequent intervals accommodate such varieties as are of climbing habit. Near by this Rose-walk is the fruit and vegetable garden. This occupies a considerable area, and although but recently formed and planted, has the appearance of a sometime established garden. We were surprised at the general appearance of the occupants, remembering the exposed position; but the erection of substantial walls has done much to lessen the effects of the "north-easter."

Peaches and Nectarines looked promising for fruit, and we were informed that last season the crop of these fruits was bountiful. Given an opportunity of "setting," fruit succeeds well in these gardens, for when the cold winds of March and April are over the situation is a favoured one, and reliable weather may be counted on until the winter sets in again. The promise for Pears appears to be a good one; indeed the fruit crops generally in this part of Kent are looking well.

The breadths apportioned to vegetables were well filled, and showed evidences of careful and good gardening. Produce cannot be obtained early, owing to the exposed situation, but vegetables of excellent size and quality are grown. A model farm and the stables shelter these gardens somewhat from easterly winds. Beyond the kitchen-garden is an extensive paddock that has recently been enclosed by a border of trees and shrubs. These include many choice flowering kinds, and a pond gives opportunity for planting in its vicinity water-loving plants, such as Willows, Rhamnus, &c. The water-garden already alluded to is in keeping with the general design of the grounds, and is oblong in form, with sloping banks that are furnished with "pockets" planted with such species as Caltha palustris, Arundo donax, Irises, Butomus umbellatus, Osmunda regalis, and other water and bog plants. The pond itself is gay in summer-time with Nymphæas, of which a fine collection has been planted. The water-garden is, in our opinion, rather too formal in character, in fact, if any fault is to be found with the landscape gardening at Walmer Place generally, it is for the rather severe formal character that has been adopted. This feature is even apparent in the kitchen-garden, which above all other places should be one of utility and not of ornament. The kitchen-garden is supplemented by a smaller one at the north end of the estate, and here are also situated the glass structures, but these are not extensive. They comprise a vinery, plant-house, conservatory, and propagating pits. The plants are such as furnish flowers for cutting, or as are of decorative value in the residence. Everything is maintained in a high state of excellence at Walmer Lodge, the grounds and plants being in the best possible order. Mr. F. Sparks, the present gardener, has been charged with the care of this estate for many years past.

DENDROBIUM PARCUM.

THIS singular little Burmese species has slender pseudo-bulbs furnished with generally two-flowered inflorescences. The flowers when mature are rather over ½ an inch in length, and of very remarkable structure. The yellowish-green sepals and petals, the former of which are expanded below, fit closely together, and form a hood over the column, from the base of which, on the upper edge of the mentum, the labellum is delicately hinged and curved upward at the base, so that the singularly stalked labellum in the early stage of the flower juts out from the centre, as seen in the upper pair of flowers illustrated. The cuneate marginate front of the lip in this stage is nearly flat. When mature the labellum hangs point downward, the front being concave. If the flower is gradually turned so that the labellum is made to assume a more horizontal position it quickly moves over to the column as though attracted by a magnet. The action would carry the head of an insect moving on the blade and isthmus of the lip over to the pollinia and

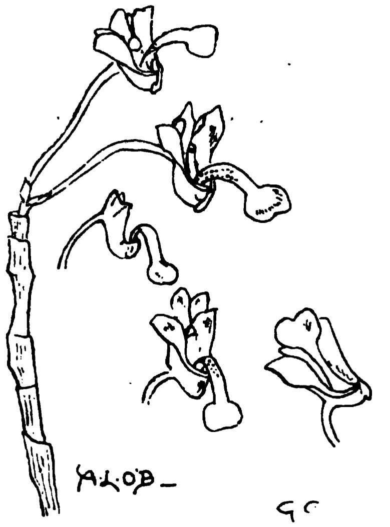
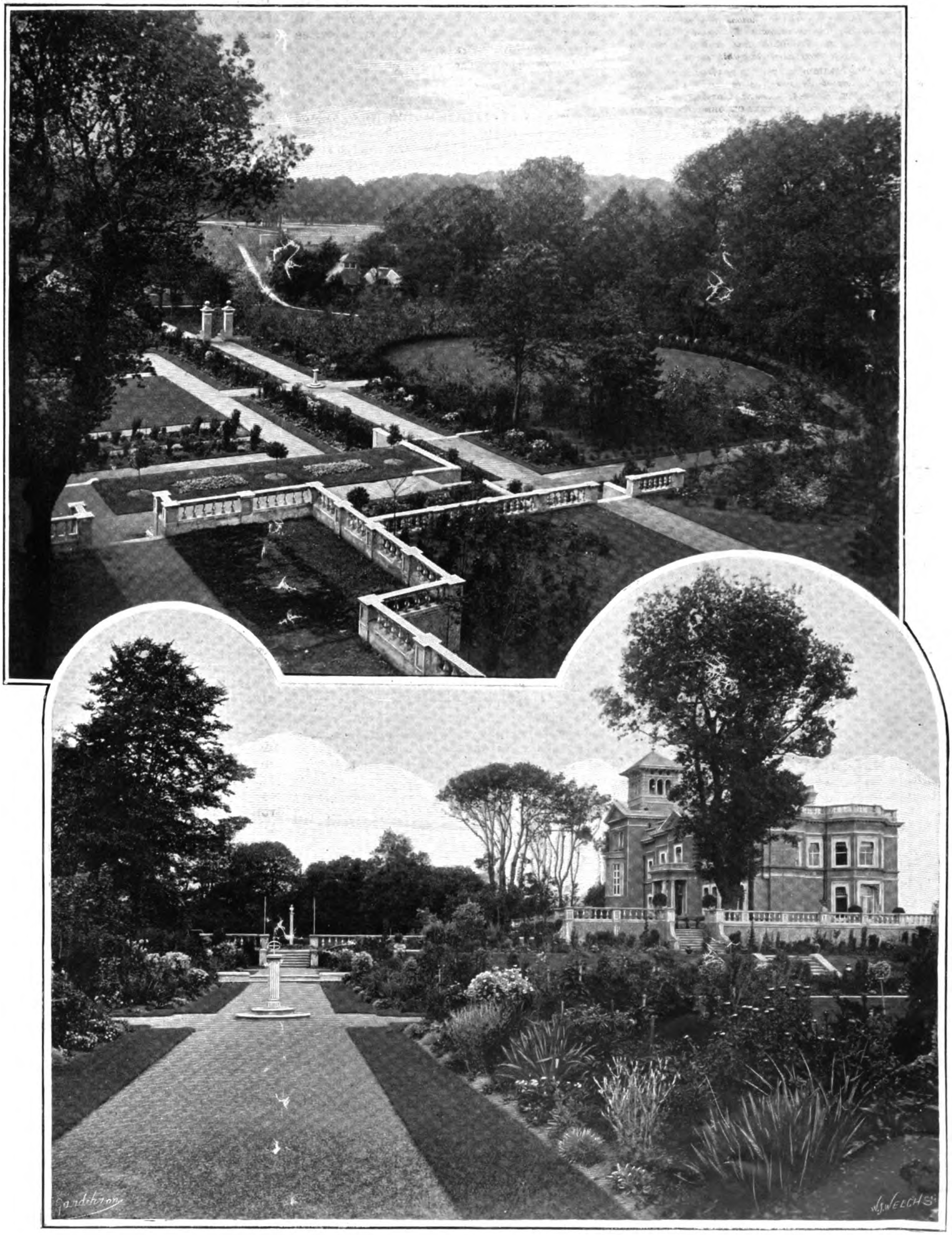


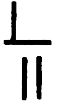
FIG. 132.—FLOWERS OF DENDROBIUM PARCUM WITH MOVABLE SPRING-LIKE LABELLUM.

Supplement to the "Gardeners' Chronicle."



VIEWS IN THE GARDENS OF WALMER PLACE, NEAR DEAL, THE RESIDENCE OF A. L. OCKS, ESQ.

facilitate fertilisation, in the manner noted in some other Orchids. The lower figure on the left-hand side represents the mature flower with the labellum in the normal position. The right-hand flower shows the labellum in the position it suddenly assumes when the flower is placed at the angle represented in the drawing. The illustration in the centre represents a flower with the sepals and petals removed and the point and angle at which the labellum is attached shown. The flowers may readily be put through the movements described as often as desired, and it is very interesting to view, for the sudden attraction of the labellum takes place when the flower is at such an angle as to suggest that the laws of gravitation would be against the movement. Nor is explanation after cursory examination easy. The fact is that the axis on which the labellum hinges, owing to the curve in the lip, acts sooner than the observer expects. Then probably the elastic tissues, always strained to keep the lip in position, and which evidently keep strong hold during the early stage of the overbalancing, have a reflex action which brings about the sudden final movement. In any case it may be safely asserted that it is a wonderful piece of Nature's handiwork, and doubtless arranged to further the laws of reproduction. *J. O'B.*



[The diagram shows the way in which the horizontal lip is more or less at right angles to the erect column and then rises till it becomes parallel to it. ED.]

THE PEAR MIDGE.

THIS insect pest has of late years increased to such an alarming extent that it has become imperative for growers to exert their utmost to prevent its spreading. Some districts are more affected than others, and unless timely means are taken for its destruction, the pest threatens to become as great a scourge as the Codlin-moth. Many growers fail to recognise in the small, deformed fruits the work of this pest, and attribute their diseased appearance to unfavourable weather or an unhealthy rooting medium.

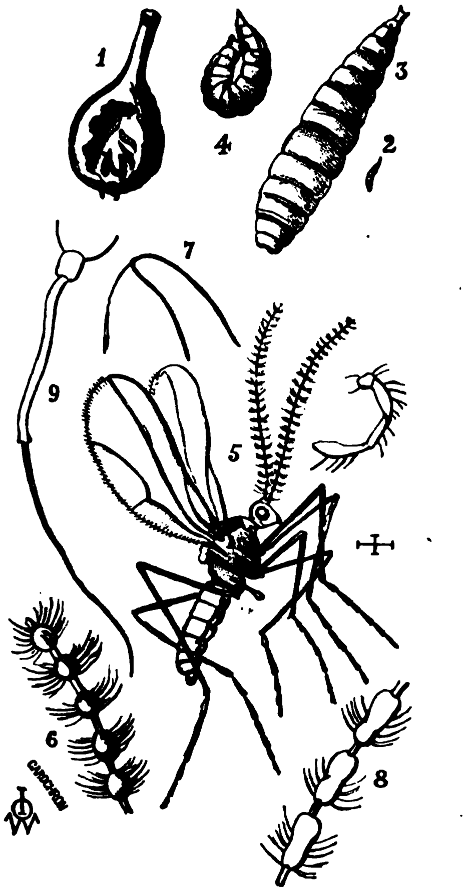


FIG. 133.—THE PEAR MIDGE.

The female insect may be seen depositing the eggs by means of her powerful ovipositor, with which she pierces the petals, sometimes operating from the top of the unexpanded flower, and at other times adhering to the side of the flower, and inserting the eggs through the calyx. I have watched this midge, which has long legs and a grey-coloured body, visit several flowers, and from close observation saw that the same operation was performed each time, which I concluded was the depositing of eggs. This was during the early days of April, and upon a subsequent examination of the marked blossoms some ten days later, I discovered the tiny grubs commencing to make an intrusion downwards into the centre or core of the fruit. The work of devouring the interior of the fruit will go on until only the outer skin of the Pear is left. The number of grubs present at this stage are about twelve to each fruit, but the fruit soon falls to the ground, when the insects quit their cradle of birth and bury themselves in the ground, at about an inch from the surface, where they remain and are metamorphosed into cocoons.

At this stage of their life-history they are easily destroyed by keeping the soil below the trees constantly stirred by hoeing or raking, and then allowing poultry a free access around the trees. Another remedy is to apply a dressing of kainit to the trees immediately the grubs have reached the ground, selecting a showery day for the purpose. This operation proves disastrous to the grubs or larvæ, and also benefits the trees by the addition of potash salts to the soil. All infested fruits should be immediately gathered and burnt. *W. H. Clarke, Aston Rowant, Oxon.*

[We reproduce our woodcut (fig. 133) which represents, 1, a young Pear cut open, showing the hollow made by the five enclosed larvæ; 2, the larva natural size; 3, the same magnified; 4, the same preparing to leap; 5, the male midge, the natural size being indicated by a small cross. The jointed process at the right side of the antennæ represents one of the palpi; 6, five of the terminal joints of the male antenna; 7, apex of the wing, showing the thickened margin continued into the extremity of the main vein of the wing; 8, three of the middle joints of the female antenna; 9, the elongated telescope-like ovipositor of the female. ED.]

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

A GOOD AND EARLY MELON.—On April 23 last it was my good fortune to partake of a Melon which was remarkably handsome, of exquisite flavour and possessing an exceedingly thin skin, indeed, the latter was so thin that it was scarcely necessary to leave it upon the plate. The fruit was a new variety raised at Impney by Mr. Jordan, and he is very fortunate in having secured a Melon of such merit. The seed was sown about the middle of December, and the plants were grown in pots. The fruit was ripened perfectly on April 22, which, considering the sunless season, will be admitted to be early. Moreover, the flavour was so rich that it was superior to the majority of Melons produced in the hot weather of July and August, and very nearly equal to the best it has been my experience to eat or test at that period of the year. My notes of the fruit at the time are as follows:—"Fruit nearly spherical; short stalk; weight, 3½—4 lb.; very slightly corrugated; skin clear yellow and beautifully reticulated; flesh, white, 1½—2 inches in thickness and semi-transparent; skin, very thin, no thicker than a sixpenny piece; excellent flavour; a very beautiful Melon." It was the most handsome Melon I have seen during forty years; I completed my fortieth year of practical horticulture yesterday, May 6, and I have never been so reluctant to cut a Melon, though I am passionately fond of the fruit. *J. Udale.* [We have had an opportunity of tasting this Melon. It is a very handsome fruit in appearance, juicy, of good flavour, especially for the time of year, and, as described by Mr. Udale, the skin is unusually thin. ED.]

ARE COMMERCIAL TRAVELLERS A NUISANCE?—One word will suffice to answer this question, and many readers I am sure will join me in saying that that word is "Yes." At certain times these are as great a nuisance to the head-gardener as book-canvassers are to the under men. Their coming is usually announced by a card bearing the name and the date of their proposed visit. Except in the case of a few who appear on the date fixed, the majority come when convenient to themselves, a week before, perhaps a month behind the appointed time, fully expecting the gardener in either case to be awaiting their arrival. The answer to their abrupt question, "Is the gardener about?" being in the negative, they turn to the foreman as a substitute, and ask him to escort them through the glass department, which is done more from courtesy than from pleasure. In the absence of the gardener I have shown men round, who have not had a single word to say in favour of anything, either inside or outside; yet the same person, when taken through a second time by the gardener himself, professed himself delighted with all he saw. I am of opinion that such men as these are more of a disadvantage than an advantage to the firm they represent, besides being a "pest to gardeners"; and may their answer be "No," although at that moment the gardener may be within easy distance. *A Foreman.*

PLANTS IN A GARDEN AT FALMOUTH.—In the *Gardeners' Chronicle* for May 6, Mr. Fitzherbert gives a list of thirty-two plants which he saw in a garden at Falmouth, and of which he says "none of these are hardy in the open except in the south-west." I should like to say something for Castlewellan, which is situated in the extreme north-east, about 20 miles from Belfast. If Mr. Fitzherbert will honour me with a visit, I shall be pleased to show him in this garden twenty-nine plants out of his list of thirty-two, all having grown in the open for many years, and some of them of a notable size—e.g., Desfontainea spinosa, 13 feet in height and nearly 60 feet in circumference; nineteen varieties of Pittosporums, several up to 20 feet in height and over 20 feet through. Edwardsia grandiflora is 12 feet high and the same in diameter; Embothrium coccineum against a wall 12 feet high; Benthamia fragifera is 15 feet high and 12 feet in diameter; Berberidopsis corallina against a wall is 14 feet high; Callistemon brachyandrus is 6 feet high. All these are in his list as not being hardy except in the south-west of England. We also find that the following plants are hardy here:—Lapageria alba and rosea, on a wall; Mitraria coccinea, 5 feet high and 6 feet through; Philesia buxifolia, 4 feet high; Plagianthus Lyalli, 12 feet high and 8 feet through; Puya chilensis, 8 feet high; Restio subverticillatus, Rhaphithamnus cyanocarpus, 8 feet high; Senecio rotundifolius, Disanthus cercidifolia, Carmichaelia australis, 7 feet high and 6 feet across; Cinnamomum sericeum, 5 feet high. If Mr. Fitzherbert will look at Earl Annesley's book on rare trees and shrubs published last year by Newnes & Co. (a book which no lover of choice trees and shrubs should be without), he will see that although Castlewellan is some 280 miles north of Cornwall, we have grown for many years quite as many tender and rare plants as are to be found in any garden in that county. *T. Ryan, The Gardens, Castlewellan.*

EFFECTIVE FLOWER-BEDS. — Oblong and circular flower-beds having a groundwork of the variegated-leaved light pink flowered Pelargonium Manglesi, or dark and light flowered Fuchsias, or Acacia lophantha with its beautiful Fern-like foliage, with Abutilons niveum, marmoratum and Thompsoni, with their elegantly marbled foliage and beautiful orange-yellow cup-shaped flowers, disposed somewhat thinly over the surface as "dot" plants, make very effective "mixed" beds either in the flower garden proper or on the lawns. Beds carpeted with blue Viola, edged with Pelargonium Mangles' var., variegated with "dot" plants of light-flowered Fuchsias, Acacia lophantha, Lilium candidum (the common white garden Lily), and Celosia pyramidalis, coccinea and aurea, with their grand crimson and rich yellow blooms make a delightful combination of foliage and flowers. Similar-shaped beds planted with the yellow-flowered Viola Golden Queen, edged with a good broad band of blue Lobelia and "dot" plants of Heliotrope Madame Crousse, and Charles Turner Ivy-leaf Pelargoniums, tied up to stakes so as to form pyramids of their large trusses of satiny-pink and crimson flowers borne on long stems, show off to great advantage when contrasted with specimens of dark and white-flowered Fuchsias, and the beautiful blue-flowered Salvia patens. Again, beds edged with a good band of Pyrethrum aureum laciniatum, carpeted thinly with scarlet-flowered Pelargoniums, with "dot" plants of the richly-striped Japanese Maize, Dactylis elegantissima aurea (Ribbon-grass), Perilla nankinensis (dark foliage), Ageratum mexicanum (mauve-flowered), white-flowered Ivy-leaf Pelargoniums, and Plumbago capensis, and light-flowered Fuchsias, would produce a pleasing and quiet combination of colours. *H. W. Ward.*

THE CURRANT-BUD MITE.—It would be surprising if anyone had adopted Mr. Pearson's recommendation to spray with Quassia, &c., in order to destroy the Currant-bud mite. The mite is so well protected by the leaves of the bud that the only result would be to make the Currants uneatable without injuring the pest in the least. I find that the plague can be so far mitigated as to enable us to obtain a fair crop of fruit by picking off the infested buds in April, when they can be easily seen. In the spring of 1903 I found two of my bushes infested, and had them dug up at once and burnt. Notwithstanding this, in 1904 several bushes were infested. I had all the "big" buds picked off in April, and when they were very numerous on a branch, the branch cut off. This year the affected buds were apparently about the same as last, and we shall have a very fair crop of fruit. But whether it would pay a farmer to do this is another matter. *Alfred O. Walker, Ulcombe Place, Maidstone.*

BERMUDA ONIONS. — The Bermuda-grown Onions which the Dempster Steam Shipping Company has recently been distributing among the restaurant keepers of London, represent a small, serviceable, solid type of the brown Spanish Onion, which does not show the slightest tendency to start into growth. The firmness and solidity of the flesh is one of the principal features of the Onion, but in reference to its apparently good keeping qualities, it is requisite to know when and under what conditions the Onions were grown, and what steps were taken to preserve them. The object sought by the Company is to create a demand for the Onions, which, so far as it is understood, will be grown in Bermuda, but their distribution will be a monopoly of the Company. The Onion is said to cook well and be both succulent and tender to the palate. *R. D.*

VEGETABLE EXHIBITION POINTS.—It is very doubtful whether, since vegetable competitions have been established, a richer series of prizes for an open collection has ever been offered than is found associated with Class 174 in the schedule of the great international exhibition of the Royal Caledonian Society, to be held in Edinburgh next September. The number of dishes in this collection, which is open to all, is limited to twenty-four, and of these two varieties of any one kind may be included. There are four prizes of a total value of £51, the first prize being of the large sum of twenty guineas. But then it is hoped that such liberal sums may tempt first-class growers from a distance, and if such high-class exhibitors from England as Messrs. E. Beckett, J. Gibson, B. Ashton, and possibly one or two others, can be thereby induced to compete with other not less eminent Scottish growers, there should be a battle royal over vegetables which should prove to be one of the most exciting events of what will doubtless be a magnificent show. But as a special class for eighteen dishes follows, and is restricted to Scotland only, it is feared there may be for that reason some hesitancy on the part of northern men to enter the open competition. It is commonly assumed that the northern growers favour size in vegetable exhibits beyond what is ordinarily seen in England. That has to be fully proved. It may be that, should there be competitors from both countries, the one may present slightly larger exhibits than usual, and the other may be less large. It may afford some slight clue to the wishes of the framers of the open class when we read that whilst in all cases the maximum numbers to a dish are stated, it is significantly added the full number on a dish shall not outweigh by mere number quality on a smaller dish, the inference being that what is generally known as quality in the south is desired at Edinburgh. The schedule classes certain vegetables as numerical or point values. With these generally there is little room for objection, but in the south we put Carrots and Beets, the former especially, in the autumn as of the first class, whilst in Scotland they come into the third class. Broccoli, Leeks, Potatos, Onions, Mushrooms, Celery, Brussels-Sprout plants, Peas, and Tomatos, come into the first class with seven points maximum; Runner or Dwarf Kidney Beans the second class with six points; and Beets, Carrots, Parsnips, Turnips, with several others, coming into a third class with but five points maximum each. That Runner Beans, for instance, should as an autumn vegetable be placed in a lower category than Leeks or Mushrooms, and Carrots lower still, seems odd to southern growers, as here we regard both these as at once difficult to grow and of the highest importance. However, as the estimates put on these things by the Committee are the same for all exhibitors competition will be fair and square all round. *Reader.*

CUCUMBER SPOT.—I very much object to being misquoted by anyone in a discussion on any subject in a public journal or otherwise, and therefore, thinking that Mr. Thomas had done so unwittingly at p. 219, wherein he stated that "the most likely cause, in Mr. Ward's opinion, for the attack of the spot disease is to be found in the weak and worn-out condition of the plants after a period of continuous fruiting," I naturally enough wrote to the *Gardeners' Chronicle* for April 22 disclaiming having either entertained or expressed in writing any such opinion as Mr. Thomas has ascribed to me. And if readers interested in the subject of the spot disease in Cucumber leaves will be good enough to refer to my previous letters on the subject (see issues for February 18, March 25, and April 22), they will see how far Mr. Thomas is justified in the interpretation which he has placed on certain sentences of my letters in his article for April 8, and also in your issue for May 6. I think I was quite explicit in my statements and conclusions arrived at after careful observations and actual experience with the spot disease in its various stages of growth. Of course, I am not responsible for inferences drawn by your esteemed correspondent, Mr. Thomas, or any other writer on the subject. Mr. Thomas having quoted a passage from my article printed in your issue for February 18, without however giving the context, and placed his own interpretation thereon, asks: "If this was not his (Mr. Ward's) intention, it is difficult to understand the reason why he wrote the paragraph in this connection." The paragraph referred to by Mr. Thomas at p. 284 (without giving the context) was penned to show the entirely different conditions under which Cucumber plants are grown for market as compared with those practised in private gardens, and the consequent immunity of the latter class of plants from the spot disease. *H. W. Ward, Rayleigh.* [Enough has now been said on this subject. Ed.]

RISKS OF ORCHID COLLECTORS.—As showing the difficulties that meet collectors of Orchids in their native haunts, I am forwarding some extracts from a letter my employer, Mrs. T. Fielden, has just received from a gentleman friend in South America, who recently sent us an importation of Cattleyas:—"I spoke to the collector 'K.' about Lælia Boothiana syn. Cattleya lobata, and he says it grows on naked rocks in the full glare of the sun, hence in cultivation it should have as much sunshine and dry heat as possible to ensure its flowering at all freely. He seems to have had a great difficulty in getting the plants. It appears they only grow on a mountain mass of rock at the northern entrance to the Bay of Rio de Janeiro. 'K.' was accompanied in his journey by a German friend and six workmen. After a tramp of some 12 miles they reached the mountain, which they ascended by a rough channel naturally cut out of its smooth surface, its height being about 300 feet. They then tied ropes to clumps of Cactus, and began to let themselves down the steep slope facing the sea. On getting about one-third of the way down they came to ledges of rock covered with small Cactus, rough grass, and clumps of Lælia Boothiana. One of the party being on the look-out for Lælia amanda, a natural hybrid, rushed to a large clump and began to pull the stems aside, when he saw a black roll—a poisonous snake, the kind called in the West Indies Fer D. Lance, I believe. They then got up a snake-hunt, and killed half-a-dozen in sizes from 2 to 7 feet in length. In order to get at the plants they had to walk about in prickly Cactus up to their knees, the spines of which pierced not only trousers but stout leathern shoes. Fortunately they did not get bitten by the poisonous snakes. They then found out it was too late to get back before dark, so made beds of rough grass on a rocky ledge and slept there. Next day they let themselves down to other ledges until they got to the perpendicular portion that reached direct to the sea. The heat was so overpowering that some of the party were almost overcome with faintness in pulling themselves up the last slope, which, fortunately, all reached in safety. After reaching the foot of the mountain by the same route they ascended, they began to count up their plants and found they had secured some 200 plants of Cattleya lobata, but a very much smaller number of Lælia amanda. One of the party set out to secure mules to carry the plants, and a hammock to carry one of the party who was overpowered with the heat. For some time the parts of the body exposed to the pricks of the Cactus and other scrub were sadly blistered." While the columns of the *Gardeners' Chronicle* have from time to time contained many graphic descriptions of the risks of Orchid collectors, perhaps these notes may be of interest, as they are from a gentleman engaged commercially in South America, and in no way interested in Orchid culture beyond admiring them as growing in their native habitats. *H. J. C., Grimston Gardens, Tadcaster.*

SEED-SOWING (see p. 212).—If the darkening of seeds when sown be productive of indifferent germination, how is it that the most successful growers of Mustard and Cress for market get such splendid germination in really huge quantities by closely covering up the seeds when sown with bass mats? The same results follow when similar seeds are sown in boxes in warm-houses, stood beneath stages and covered with paper. In each case warmth and moisture have far more to do with growth than light has. Admittedly the primary object in these cases is to obtain quick and tender growth, hence the exclusion of light until a few days after germination has begun. Then there is the common treatment of Radish seed as sown in great quantities by market growers. The soil of the beds is partially warmed by burying into it prepared manure, and when the seed is densely sown and covered with soil it is thickly covered further with straw-litter. Yet in such cases germination is always quick and complete. Are not all seeds sown in the open ground, if buried ½ an inch and deeper, practically in the dark? Do rays of light penetrate through 2 inches of soil—to Peas or Beans, for instance? That is not probable. The temperature of the soil and moisture are the primary factors in promoting germination, and that is just as good, and probably better, than is found in grass or Clover seed that is scarcely buried in the soil. No doubt where outdoor seeds are covered in addition to soil-covering, the primary objects sought are the exclusion of birds and drying sun-heat, as a sudden burst of such heat on germinating seed is often fatal to growth. Hence, when seeds are sown under glass some such protection is in spring and summer absolutely needful to secure germination, especially of very small seeds. Apart from protecting the soil in pots, pans, or boxes from sudden drying, the need for frequent waterings is also avoided, as even with the greatest care small seeds may be washed out of the soil, as "Heather Bell" has said and many amateurs who seek to raise small tender seeds meet with failure in consequence. A piece of glass placed over a pan or box or pot containing seed, helps to preserve warmth and moisture, but would be dangerous, as concentrating too much heat, did the sun burst out suddenly and strongly. I have commonly in such cases, and to prevent such a misfortune, strewn a little sand thinly over the glass with excellent results. I have also covered the glass with paper in the daytime, removing it at night. The theory that light is indispensable to germination [this has not been claimed. ED.] upsets the old belief that such germination is more rapid at night than it is in the daytime. *A. Dean.*

HERBACEOUS BORDER.

MECONOPSIS INTEGRIFOLIA.

THIS plant is now flowering here, planted in moist loamy soil, as a fringe to the Water-Lily pond. In our case the flowers, though retaining their cupped and poppy-like form, have opened more fully than any shown in the illustrations of the species that I have seen. The oviform seed vessels are divided into either five or six sections, showing at the apex a distinct five or six-pointed star, the number of elongated points on the star corresponding to the number of divisions in the seed vessel. This star peeping out from the large boss or pompon formed by the crowded yellow anthers, is very conspicuous in the early stages of the flower, as it is then almost black. Four is the greatest number of flowers borne by any plant here, but this number will undoubtedly be improved upon when the proper system of culture is attained. The leafage is rather sparse.

The plants were turned out of pots in November, which is, I think, rather too late, as little further growth was made by those which have since flowered, and the pushing up of the flower-stems without further growth of the plant seems to have been due to precocity induced through a check. The first flower opened on Easter Sunday, April 23, took five days to expand fully, and lasted in good condition for a fortnight, by which time those lower down the stem were expanding, so that one may reasonably expect from each plant a flowering season lasting a month, and as they do not all flower simultaneously, the season would be extended where the plants are largely grouped.

Before reading Messrs. Veitch's advertisement I had been hoping that the plant could be grown and treated like most other biennials, *i.e.*, raised during summer and planted out in October, after the summer bedding plants are cleared off, in which case it would make a grand addition to the spring flower-garden amongst bunch Primroses, Forget-me-nots, and the like; but if one has to wait an indefinite length of time, from three to fifteen months, for germination to take place, and to plant out in June to get the best results, it is obvious that too much dependence must not be placed on it for use in the formal flower-garden. Possibly, however, slow germination is due to long storage of the seeds, and when we are able to save our own seeds and sow them immediately they ripen, we may, as we already do with many hardy plants, obtain quick germination. I am looking forward to a trial on these lines, as the seed-vessels from the earlier flowers here are swelling up and look promising.

In any case, even if one cannot time the plants definitely, it will be largely grown in the mixed border, or grouped with charming effect in positions outside the formal garden. I may add that among the plants here are two that really seem to have got well hold of the soil, and are growing away without showing any signs of flower; the crowns of these have become sub-divided, consequently I am hoping for a still better, if later, display from these particular plants. *J. C. Tallack, Shipley Gardens, Derbyshire.*

[We have seen a number of plants growing and flowering very freely in the borders of herbaceous plants at Dover House Gardens, Roehampton, S.W. ED.]

FORESTRY.

THE TIMBER VALUE OF EXOTIC TREES.

BOTH Sir Herbert Maxwell and Mr. Elwes appear to have interpreted my use of the word "exotic" on p. 177 rather too literally, as they both instance the European Larch as a valuable exotic tree, which was introduced to a certain extent by accident. I intended the word, however, to apply more particularly to non-European trees, and to those indigenous to countries with climates differing greatly from that of Great Britain, so far as summer temperature goes. My chief argument, however, has less to do with the nationality of an introduced tree than with its value for timber purposes when compared with those which have been grown in Britain for the best part of two centuries.

I take it that the value of any species for economic purposes depends mainly upon two factors—1st, the cost of producing it at a suitable timber size; 2nd, the value of the timber produced per acre. The expense of production depends principally upon the value or rent of the ground required, the cost of planting, and on the time required to bring the crop to the desired size. The value of the crop per acre depends partly upon its quantity and quality, and partly upon the demand that exists for it in the timber trade We know in a general way how most European trees stand when examined on the above points, and that Larch, for instance, is a more valuable tree, other things being equal, than Scotch Pine or Spruce. In the case of recent introductions, time has not yet elapsed fairly to judge many of them, although I contend that a period of fifty years should indicate their probable value, provided that they have been fairly extensively planted as specimen trees.

Taking the factors of value as given above, and applying them to recently-introduced coniferous species, I think it will be found that the value of most of them is greatly lessened, first, by their inability to grow at a fair rate on land of poor quality or at high elevations; and, secondly, by the relatively poor quality of the timber they produce. At the present time, of course, other serious drawbacks are the high cost of the plants and the low market value of the timber; but these might be removed by extensive cultivation, and can only be considered as temporary.

But judging them with respect to their ability to grow on poor soil at high elevations and the specific quality of their timber, and comparing them with the common trees of our plantations, Scotch Pine, Spruce, Silver Fir, and Larch, I think I am fairly entitled to ask how many can equal or surpass the latter as commercial timber crops. Taking the average soils and situations found at 500 to 1000 feet above sea-level, the only Pine I know at all superior to Scotch Pine is the Corsican, whether for hardiness, rate of growth or quality of timber. Sir Herbert Maxwell, on p. 202, mentions P. monticola, which certainly stands wind well; but is it as good as or better in this respect than Corsican Pine, and is it as free from disease? Dr. Somerville states that it has been attacked of late years by a fungus in many districts, which threatens to render its successful cultivation a difficult matter. Amongst Spruces, the only superior to Norway Spruce in this country is possibly Picea sitchensis, which grows more rapidly to begin with, but usually drops off after the fiftieth year or so. The most promising Silver Fir I should consider Abies grandis; but most of the genus Abies require fairly deep soil, and I doubt very much if the common Silver Fir is inferior to any of them after it once gets away from late frosts. Amongst other coniferous genera we have one non-European tree which stands well out from the rest—the Douglas Fir, but for its successful growth it requires conditions which are rarely found to prevail over a large area in the class of land we are considering. Mr. Elwes, p. 209, mentions Thuya gigantea, but my experience of this tree is that it requires both shelter and a fairly fresh soil to produce a good specimen, while, as I have already pointed out, it is difficult to find it as a well-shaped timber tree, or rather what looks like becoming one under proper conditions.

In sheltered spots, such as glens, ravines, or lowlying land generally, most species of trees grow well, but here introduced Conifers have to compete with hardwoods, and the only two I know able to do this successfully, considering them from a purely commercial point of view, are the Larch and Douglas Fir.

Mr. Elwes in the same article raises a question as to the value of the Locust-tree (Robinia) on certain soils in the south of England. I presume he means the sands and gravels on which this tree shows best to advantage, and so far as durability of timber goes, I am quite willing to admit that nothing can surpass it. As a matter of fact I called attention to the value of this tree in the *Gardeners' Chronicle* of April 11, 1896, pointing out the useful qualities of the wood for fencing purposes But it must be remembered that the Locust-tree never becomes big timber in the same way that the Oak does, while the districts in which it can be grown are usually well supplied with the tops and small thinnings of the latter tree, which serve the same purpose. As a timber crop I should say the Spanish Chestnut would be superior to it in many ways, although the wood itself may be less durable.

As to the value of introductions for ornamental purposes I am quite at one with Mr. Elwes, but this was a part of the question I was not dealing with. I have no doubt that their use in this connection will be extended, and their beauties appreciated by the economic forester as much as by anyone. The work upon which Mr. Elwes is engaged, by giving us trustworthy evidence as to what can be grown in this country, and the conditions under which existing specimens have been produced, should encourage their cultivation on correct lines more than anything which has yet been written about them. All I ask is that they should be regarded for the present by planters with profit in view as untried species, and that they may be left out of mixtures in which they can only fail to develop as timber-trees on the one hand or as ornamental specimens on the other. *A. C. Forbes, Armstrong College, Newcastle-on-Tyne.*

ENQUIRY.

A CORRESPONDENT wishes to know from what Scottish poet the following lines are taken:—

"Give me the garden wild and wide
Where thorns and thistles side by side,
* * * * *
. . . Such place to me is Paradise," &c.

MANNING'S "MONOGRAPHS."—These differ so much from the ordinary trade catalogues that we feel at liberty to make mention of them. The treatise on berry-bearing plants is really a valuable garden monograph from the number and variety of the subjects treated of, and specially from the way in which those subjects are handled. Many of the popular names are not familiar here, but this inconvenience is compensated for by the addition of the botanical names. Lovers of hardy shrubs will be astonished at the multitude of desirable plants that are mentioned. The "Monograph" may be had from J. WOODWARD MANNING, Reading, Massachusetts.

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

May 9.—*Present:* Dr. M. T. Masters, F.R.S., in the chair; Professor Church, F.R.S., Dr. M. C. Cooke, Rev. W. Wilks, Messrs. Hooper, Saunders, Odell, Worsley, Bowles, Massee, Gussöw, Veitch, Gordon, Baker, Worsdell, Nicholson, Douglas, and Chittenden (hon. sec. Visitors: Dr. Johannsen of Copenhagen, Mons. Correvon of Geneva, and Mr. Roupell.

Welcome to the Visitors.—Dr. Masters introduced the visitors, and welcomed them in the name of the Committee.

Fruit-buds Injured.—Mr. Saunders reported on the specimens received at the last meeting from Mr. Robbins:—"I cannot find enough insects or fungi on them to account for their condition. There are a few specimens of the mussel-scale (Mytilaspis poinorum) and of the Apple-sucker (Psylla mali), both of which are decidedly injurious insects, but there were so few of them that they could not have done any appreciable harm; there were also a few mites belonging to the genus Trombidium, but they are quite harmless. There were a number of empty egg-shells on all the shoots, and a few unhatched eggs, which I will try to rear. The buds do not look as if they had been injured by insects, but as though the frost had killed them, or that much maligned combination of circumstance commonly known as the weather. I should certainly recommend the use of the caustic soda wash next winter." There was no sufficient evidence to show what had gnawed the Apple-buds received from Mr. Dunlop.

Montbretia Corms Failing.—Mr. Massee reported that these corms had for some reason or other failed to form new corms last season, and were therefore not growing this.

Deterioration of Potatos.—The Secretary read the following summary of the discussion on this subject, which he had drawn up at the request of the Committee:—

I. Do Potatos deteriorate? It is important to note that deterioration may take place from a commercial point of view, or from actual degeneration of the plant itself. (See II. below.)

1. In the broad sense they undoubtedly do deteriorate.
2. But deterioration, *per se*, also seems to occur. E.g., "Buffs" and "Dons," previously good, succumbed to disease in 1845. "Victoria" degenerated in time both as a cropper and in disease-resisting power. "Dunbar Regent," with its acknowledged excellent qualities, can have disappeared for no other reason than because it had deteriorated. Varieties degenerate sooner or later both in productiveness and resistance to disease, sometimes in as short a period as six years from the raising of the variety.

II. What are the evidences of deterioration?

1. As shown by the plant itself. (*a*) The leaves grow curly and stunted. (*b*) The plant does not develop properly, or (*c*) even fails to appear above ground at all. (*d*) The plant offers less resistance to disease (in eight years a reputed disease-proof variety became much diseased).
2. From the growers' point of view. (*a*) The produce is much lessened (in one case cited by 50 per cent. after two years) when grown on the same soil. (*b*) The size of the tuber is reduced ("in fifteen years the Potatos were no larger than marbles").

III. Why does deterioration occur?

1. It may be brought about by local conditions.
   a. Treatment. (1) Wintering tubers under conditions causing premature sprouting. (2) Growing continuously on the same soil. (3) Unsuitable manuring. (4) Possibly by selection of small tubers (but this is by some regarded as unlikely).
   b. Economic reasons. (1) Supplanting by varieties of greater productiveness or other desirable quality. (2) Ease with which new varieties are raised. (3) Novelty of later-raised varieties.
2. But it is also due to inherent causes. (*a*) Old age or disturbance in the balance between waste and repair. (*b*) Possibly the tendency to form seed, but there is a marked exception in the Ashleaf. (*c*) The Potato is an exotic, and is, therefore, never grown under absolutely natural conditions. It may be that even after 300 years' cultivation it has not become completely adapted to or in harmony with its environment.

IV. How is the fact that certain varieties (e.g., Ashleaf, Early Rose, Magnum Bonum, Maincrop) do not appear to have degenerated after long cultivation to be explained in view of the foregoing facts? It is probable that newly-raised varieties vary in vigour as well as in other characters, some having sufficient vigour to carry them through only six years, others through very many. Cross-fertilisation, as a rule, results in the production of longer-lived varieties than does self-fertilisation.

V. Points of practical importance. How may the life of a variety be prolonged?

1. Greater care should be exercised by raisers in introducing new varieties. Only those with plenty of initial vigour should be offered to the public.
2. Well-matured tubers should be chosen for "seed." Size of seed is not so important, but uncut tubers of medium size give, in the long run, the best results.
3. Selection of tubers in other directions can be expected to give little result, but "sports" do occasionally occur, but are usually of no practical value.
4. Sets should be stored so that they do not exhaust themselves by premature sprouting.
5. The seed should be frequently changed; the best seems to come from Scotland, but even there change of soil seems necessary. The second year's crop is usually the best.
6. Probably excessive manuring with nitrogenous manures may lead to more rapid degeneration.

VI. The main objections to the idea of degeneration naturally occurring in asexually-produced varieties were (1) the fact that some varieties persist apparently unchanged for long periods—this point is dealt with in paragraph IV.; and (2) the idea that plants produced asexually are entirely new individuals, and not merely parts of one individual; this question cannot be regarded as definitely settled.

VII. Other points. The discussion also brought out a considerable body of facts regarding other plants of great use and interest, and provided suggestions for a very large amount of experimental research.

Etherisation of Plants.—Professor Johannsen, of Copenhagen, the inventor of the process, gave a short account of the method of etherising plants in order to shorten their period of rest and induce them to flower more speedily (see *Journal of the Royal Horticultural Society*, xxviii., 1903, 45), explaining his conception of the action of ether, &c., upon the plants.

Shoots of Yew Injured.—Mr. Saunders, F.L.S., showed some shoots of Yew, the leaves of which appeared to be covered with a pale yellow alga. Mr. Massee undertook to examine these.

Hybrids.—Mr. Worsley showed flowers of a hybrid between Tropæolum peregrinum and T. Lobbianum, and between a Phyllocactus hybrid and a white night-flowering species of Cereus. The flower was intermediate between the parents in all characters except that the stigma was white, while in the female parent it was purple, and in the male yellow. The flowers of the hybrid opened in the evening. and were at first scented.

Seedling Scillas.—Mr. Worsley also showed seedlings of Scilla campanulata bearing pink flowers. The seed had been saved from plants with blue flowers, the only others near being white, no pink-flowered plants being in the garden.

Effect of Manures on Rye.—Mr. Baker showed specimens of Rye grown under different manurial conditions. What was apparently the best part of the field was untreated and bore very poorly, the other parts, on a poor, chalky soil, received dung or ashes from a destructor. The former gave a very lush growth, which was, however, weak and somewhat crippled at the nodes, while the crop on the portion manured with destructor ashes, which contained no nitrogenous matter and much potash and phosphoric acid, was strong and healthy-looking.

Shoots of Rose Injured by Weevils.—Mr. Saunders reported on some shoots of Rose, sent by Mr. Yarde, of Northampton, that had the young plants eaten, and rings gnawed round the stronger shoots, as follows: "The injury was caused by the 'clay-coloured weevil' (Otiorhynchus picipes), which feeds only at night, when they may be shaken off the bushes into an open umbrella, or on to boards, or sheets of metal freshly tarred, or on to white cloths laid under the bushes. They will lie as if dead and remain still with their limbs close to their bodies for a minute or two, so that there is plenty of time to collect them. The insects hide very carefully during the day, and small bundles of dry moss or hay tied to the stems of the Roses would provide them with suitable shelter. These should be examined every morning to see if any weevils are present. The weevils often prove troublesome in greenhouses, and their grubs feed on the roots of Ferns, Cyclamen, Primulas, and other plants.

Pagoscope.—Dr. Masters showed a "pagoscope"—an instrument invented in France recently—by which it is possible to ascertain, with approximate accuracy, the previous night, the (1) probability of a frost before morning, (2) the possibility of a frost, or (3) the certainty of freedom from frost. He had tested the instrument, which was illustrated in our columns at page 133 of the present volume, for some time, and had found it to be satisfactory.

THE LIÈGE HORTICULTURAL EXHIBITION.

May 8, 9, 10.—Although somewhat incomplete the horticultural section of the exhibition was nevertheless interesting, and will certainly be more so as the season advances, and when in the autumn the exhibition of the fruits for which the country is justly well known takes place. For the present the interest centres round the plants under glass, which are exhibited in a well-lighted temporary building, beds being disposed so that the plants may show themselves to the best advantage, while stages are arranged around the sides for the reception of plants of smaller dimensions. The exhibitors, native and foreign, did their utmost to make this great effort a success. Large groups of well-grown Palms were to be found occupying the corners of the horticultural hall, forming a fitting background for flowering and foliage plants of smaller dimensions. These were principally supplied by Messrs. Jacob Makoy, of Liège, and comprised plants of great interest, not only Kentias, Latanias, Phœnix, as usual, but also fine specimens of Ceroxylon andicola, Kentia Lindeni, &c.; and by Messrs. Duriez Frères, of Wondelghem, who in their group included a grand specimen of Cibotium Schiedei and a pair of tub-grown Pteris Ouvrardi, and Microlepia hirta cristata such as are seldom seen. Mr. Draps Dom, from Laeken, contributed besides a grand specimen of Cocoloba pubescens and a splendid plant of Croton "Lord Rendell," a group of deserving Dracænas, such as "Père Charon," "Madame Draps," and a number of unnamed seedlings. Mr. Arthur De Smet had a grand lot of forms of Anthurium Scherzerianum, including one with flowers of large dimensions, red and green.

Among the Orchids exhibited on this occasion Mr. Peeters, of Brussels, no doubt showed the most interesting group, consisting principally of hybrids between Odontoglossum Rolfeæ and O. crispum, and various other forms all beautiful; and also very pretty hybrid forms obtained by the crossing of O. Adrianæ and O. crispum "Queen Victoria," besides grand spikes of the much-admired O. crispum St. Gilles, Stanley, and ucclense.

Mons. C. Maron, of Brunoy, exhibited an interesting group of his own hybrids, the most remarkable being Lælio-Cattleya Madame Màron and Impératrice de Russie.

Mr. F. Lambeau, of Schaerbeeck, showed a very fine form of L.-C. Dominyana H. Greenwood, Merciana a curious and very pretty hybrid between C. amethystoglossa and flava; a good specimen of Cypripedium Helvetia superba, and numerous others.

A splendid bank of numerous forms of Odontoglossum crispum was staged by Mr. Arthur Salle, of Fleurus; while Messrs. Pourbaix, Frères, of Mons, among an interesting very varied group, showed Masdevallia Pourbaixi, a free-flowering plant, remarkable for the coppery colour of its medium-sized flowers.

Among new plants we noted Cymbidium insigne (Rolfe) exhibited by Messrs. Camille Frères; Dracæna Leopoldi, by Messrs. Jacob Makoy. The same firm also showed a collection of Bromelias, a very interesting collection of Marantas, comprising M. Mazeli, M. insignis, M. Sallieri, M. illustris, &c.

"La Roseraie Belge," of Brussels, exhibited a fine lot of Chrysanthemums, with flowers as large and of as good substance and form as those usually seen in November. These were plants from 15 to 24 inches high and grown in 48's, bearing one flower each—white, yellow, bronze, purple, and pink.

Possibly the most striking lot was a collection of fine specimens of New Holland plants—various Acacias, Brachysema, Eriostemon, Polygala, Kennedya, Correa. These were shown in excellent condition by Madame Leonie Oesterrieth, of Antwerp, who sent also a magnificent Rhododendron Gibsoni, a beautiful pink Metrosideros semperflorens, several hybrids of Azalea amœna, with a well-flowered specimen of Adenandra fragrans, all of which attracted considerable attention.

LINNEAN.

MAY 4.—Professor W. A. Herdman, F.R.S., President, in the Chair.

The first paper was read by Mr. R. N. Rudmore-Brown, B.Sc., on "The Botany of Gough Island, Part I., Phanerogams and Ferns," and communicated by Mr. W. B. Hemsley, F.R.S., F.L.S.

Gough Island, or Diego Alvarez, lies in the mid South Atlantic, lat. 40° 20′ S., long. 9° 56′ 30″ W., and may be regarded as the most outlying member of the Tristan da Cunha group, a small island between 7 and 8 miles long and half as wide, rising to a height of 4,000 feet. It has been occasionally visited, but never permanently inhabited. The chief features of the vegetation are the tree Phylica nitida and the Tree-Fern Lomaria Boryana. Four of the seventeen species of phanerogams are almost certainly introduced, while two, a species of Cotula and an Asplenium, are new to science. The Scottish Antarctic Expedition lay off the island for three days in April, 1904, but, owing to high seas, landing was only practicable on one day, when the materials for the present paper were collected.

The second paper was by Professor A. G. Tansley, F.L.S., entitled "The Study of Vegetation: its present condition and probable development." The word "Œcology," introduced by Professor Häckel, means the study of the vital relations of organisms to their environment, and by Professor E. Ray Lankester has been termed "Bionomics." Restricting his remarks to a special branch of the subject, the author proceeded to consider the plant-association as the unit, the great fact being the association of plants under definite conditions of environment. Instances were given of sets of plants found in meadows, woods, cultivated fields, moors, and dunes. The actual subject is not new, but the publication of Professor Warming's *Plantesamfund* in 1895, translated into German the following year as *Lehrbuch der Œkologischen Pflanzengeographie*, made it for the first time possible to estimate what has been done, and how much remained to be done. It was in this volume that the importance of the plant-association as the unit, was first brought clearly into view. A "plant-association" may be defined as the smallest aggregation of individuals belonging to one or more species living under definite conditions. A "plant-formation" is an aggregate of a higher order, usually including many associations and determined by more general conditions. These may be studied in many ways. Thus the detailed study of the unit; the species forming it and the causes enabling them to maintain their position; its phylogeny. Then the same methods with regard to the plant-formations, classed into groups and still larger aggregates. For these, help must be drawn from various quarters, anatomical and physiological research, the physical conditions, the meteorology and geology of the localities studied, and the experience of foresters and cultivators must all be utilised. These may be plotted on maps of appropriate size, in colours or symbols, thus constituting Phytotopography.

Considerable progress has been made with a "primary analysis" of the plant-formations of Great Britain by these surveys. The initiation of this work was due to the late Robert Smith, of St. Andrews, and since his death it has been carried on by his brother, Dr. William Smith.

Cultivation has naturally interfered with the wild plants, but man's power is limited, and the plants he cultivates must also be taken into account. Thus in the northern districts the upper limit of Wheat cultivation is an important piece of information; but where Wheat is stopped Oats may still succeed. When conditions have been altered by drainage, grazing, or the like, these, however complicated, must be investigated. The study is still in its infancy, but the author believes that it will occupy the attention of the coming generation probably during the next half-century.

Dr. G. Herbert Fowler communicated a paper by Messrs. E. W. L. Holt and W. M. Tattersall, on the Schizopoda captured in the Bay of Biscay during a cruise of H.M.S. *Research*, to which he has added an appendix dealing with the distribution statistically.

ROYAL GARDENERS' ORPHAN FUND.

MAY 11.—On the foregoing date the seventeenth Annual Festival Dinner of the Royal Gardeners' Orphan Fund took place at the Hotel Cecil, when the Earl of Mansfield presided. In compliment to his Lordship, he and the guests were led into the Banqueting Chamber by a number of Scotch pipers. Earl Mansfield was supported on his right hand by Herbert Hicks, Esq., and on his left by Dr. Maxwell T. Masters, F.R.S.,, also by Messrs. H. J. Veitch, Edward Sherwood, W. A. Bilney, Leonard Sutton, George Munro, and a large company.

Upon entering the room the scene was an unusually bright one, for the tables were profusely yet tastefully decorated with an extensive variety of plants and flowers now in season. When the Royal toasts had been enthusiastically celebrated, Lord Mansfield proposed the toast of the evening, "The Royal Gardeners' Orphan Fund," and in a very clear and businesslike speech stated the objects of the Fund and the work that is at present being accomplished. There are 105 orphans receiving full benefits, and 24 candidates for election, of whom 20 are already enjoying a considerable amount of relief. Of the 105 orphans on the funds, his Lordship found that thirteen came from north of the Tweed, but he reminded his hearers that these by no means represented the number of those on the funds whose parents or forbears were of Scottish nationality. Proceeding to speak of the claims there might arise for help from this Fund, his lordship said that gardening was a very wide profession; there were large gardeners, small gardeners, and stupid gardeners. Appealing for continued and increased support for the Institution, Lord Mansfield said that there was nothing like helping oneself in order to get others to help you. It is the duty of every gardener to contribute to this Fund, and also a matter of common foresight and providence. In conclusion, and speaking in reference to the scene at the dinner, his lordship said, "It is the most marvellous galaxy of beauty, I think, that I have ever beheld in my life."

Mr. Leonard Sutton, trustee, and a liberal supporter of this charity, responded in a suitable speech.

The next toast was that of "Gardeners and Gardening," proposed by Herbert Hicks, Esq., and responded to by W. A. Bilney, Esq. Mr. Bilney incidentally mentioned that it is now no uncommon thing for 100 visitors to see the Royal Horticultural Society's gardens at Wisley in a single day. Mr. Bilney had found that gardeners generally were honest, sober. and industrious men; but a gardener was "like a wife, you can only get one good one in a lifetime."

The toast of "The Visitors" was proposed by Edward Sherwood, Esq., and responded to by the Rev. J. C. Eyre Kidson.

Mr. David Laird proposed "The Press," and said that the company had a good, respectable, and premier laird of Scotland in the chair, and he as a wee "laird" had pleasure in proposing this toast and coupling with it the name of Dr. M. T. Masters, F.R.S., whom, said Mr. Laird, they in Scotland regarded with great respect as one of the leading figures in contemporary horticulture.

Dr. Masters, in response, said that the Press arranged, decorated, and set out to the best advantage the fruits and flowers of literature supplied by its contributors, and hence in replying to this toast they were in a measure blowing their own trumpets. Occasionally the Press tried to caution its readers from being over-confident in the matter of over-boomed Potatos, coreless Apples and other such things, but he assured those present that no part of the work the Press had to discharge was more agreeable to its representatives than that of advocating the claims of such institutions as the Royal Gardeners' Orphan Fund.

The Secretary, Mr. B. Wynne, stated that the Chairman's list, including the stewards' lists of donations, amounted to £825. This included a donation of £50 from Lord Mansfield, £100 from Mr. Sherwood, £50 from Mr. Leonard Sutton and numerous smaller sums from various contributors. Friends in Covent Garden Market supplied £136 8*s*. 6*d*. The total is £10 more than last year, and the sum last year was the largest that had been obtained on a similar occasion since 1896.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

MAY 11.—The annual general meeting of the above Society was held at the Coal Exchange, Manchester, on the above date. S. Gratrix, Esq., occupied the chair, and about forty members were present.

The Hon. Secretary (Mr. P. Weathers) read the report for the past year, which was adopted. The Society's financial position is in a satisfactory condition, and the work of the Society had been up to the average.

A. Warburton, Esq., of Haslingden, was elected chairman for the session 1905—1906; and E. Ashworth, Esq., of Wilmslow, vice-chairman.

There was a capital display of plants at this meeting, good groups were shown by A. WARBURTON, Esq., consisting of some fine Odontoglossums, viz., a beautiful variety of O. × ardentissimum (Silver Medal).

Messrs. CYPHER & SONS also received a Silver Medal for a good, showy collection of plants.

Bronze Medals were awarded to T. M. CROOK, Esq., Morecambe; W. THOMPSON, Esq., Stone; and CH. VUYLSTEKE.

Votes of Thanks were passed to Messrs. LAVERTON, HOLMES, and SCHOFIELD.

S. GRATRIX, Esq., Whalley Range, received an Award of Merit for Odontoglossum crispum var. Northern Star.

P. SMITH, Esq., Sale, received an Award of Merit for a fine plant of Eriopsis rutidobulbon.

R. LE DOUX, Esq. (gr., Mr. Davenport), received a Cultural Certificate for a fine plant of Odontoglossum vexillarium in a 6-inch pot, carrying twelve spikes.

The next meeting will be held at the Botanical Gardens, Old Trafford, on May 25. *P. W.*

THE BRITISH GARDENERS' ASSOCIATION.

A meeting organised by the North Ferriby and District Gardeners' Society was held on the 6th inst. It was attended and addressed by Messrs. Donoghue and Carter as Delegates from the Yorkshire branch of the British Gardeners' Association. Nearly all those present promised their support to the Association, which it was agreed would do much to raise the standard of the profession.

EALING HORTICULTURAL.

MAY 15.—This Society, which has been established forty-one years, held its first annual dinner on the above date, the Mayor of Ealing occupying the chair. The object sought by the dinner was to rally to the support of the Society many of the residents in the borough who have charming gardens, but who appear to be unaware that such a Society exists among them. The attendance was not large, but it is hoped that the publicity given to the proceedings will have the effect of bringing in a body of new subscribers. The annual exhibition, which is held early in July, has during past years suffered by comparison with those of fifteen years ago, and there is great need on the part of the gardeners who grow subjects for exhibition to raise their ideals to a higher level. The meetings of the Royal Horticultural Society have no doubt been the means of drawing off from the locality an amount of practical support formerly given to the local Society.

ROYAL BOTANIC.

MAY 17.—The usual show held by the Society on this date was a great success, the conservatory and corridor being bright with a display of flowers and plants, in addition to the usual occupants of the plant-houses. The show was well attended, Tulips were a feature; there were also exhibits of Rhododendrons, Gloxinias, Roses, Herbaceous and alpine flowers, Orchids, foliage plants, bright masses of zonal and show Pelargoniums, &c.

Mr. GEORGE HOBDAY, Market Place, Romford, brought his new Rhubarb Hobday's Giant, to which was awarded a First-class Certificate.

Messrs. BARR & SON, Covent Garden, London, had a most extensive exhibit of Tulips. They had the new variety Clara Butt in excellent condition, its soft rose-pink flowers are very handsome; Europe is of a splendid scarlet colour, Mrs. Moon quite one of the best "yellows," Viridiflora was noticed, also Zephyr, and Dainty Maid. Messrs. BARR also displayed a large collection of pigmy trees (Gold Medal).

Messrs. HOGG & ROBERTSON, Dublin, staged a large group of Tulips, having representatives of most of the types, the May-flowering kinds predominating. We noticed Cleopatra, a handsome dark scarlet variety with a good interior base. There were a few Anemone flowers included in the display (Large Silver-gilt Medal).

Messrs. R. H. BATH, Ltd., Wisbech, had a grand display of Tulips in vases, the flowers, although not large in size, were in the best possible condition, and made an imposing exhibit. Mrs. Moon (yellow) was noticed, also many good forms of T. Gesnerianæ. Cordelia (rosy-mauve colour), Gala, Beauty, and John Ruskin are also worthy of mention (Large Silver-gilt Medal).

H. T. PITT, Esq. (gr., Mr. T. W. Thurgood), Rosslyn, 57, Stamford Hill, London, N., showed a commendable collection of Orchids, having representatives of many genera, and not a few novelties. Odontoglossums were a feature, several receiving awards. A plant of Odontoglossum Wilckianum Pittiæ carried a spike with eighteen well-developed flowers; it was given a First-class Certificate. O. crispum Fairy Footprints is another good thing (Gold Medal).

Messrs. JOHN PEED & SON, West Norwood, exhibited a big display of Gloxinias, having pot plants and cut flowers in boxes, relieved with sprays of Asparagus plumosus, small Palms, Ferns, &c., and finished with an edging of the golden Sibthorpia europæa. The same firm also displayed a group of Japanese Maples, in which were introduced flowering plants such as Clematis, Callas, Ceanothus, &c. (Gold Medal).

Messrs. CANNELL & SONS, Swanley, Kent, also displayed Gloxinias, having some excellent forms of this showy flower. The plants were in 32-pots, and were well grown. The same firm staged vases of show and zonal Pelargoniums. Phyllocactus C. H. Wilkins was shown in flower (Gold Medal).

Messrs. WM. PAUL & SON, Waltham Cross, showed a group of pot Roses, and boxes of cut flowers. Prominent were a number of trained plants of the new climbing variety Waltham Bride. It received a First-class Certificate from the Society. The variety Mrs. Edward Mawley was well shown, also a basket of cut flowers of Maréchal Niel (Large Silver-gilt Medal).

Messrs. T. S. WARE, Ltd., Feltham, Middlesex, brought an excellent display. They had Carnations in vases and in fancy stands, cut Roses, and an extensive exhibit of alpine and hardy plants. Among the Carnations was the new white variety, Lady Bountiful. A grand spike of Eremurus Elwesianus was shown (Silver-gilt Medal).

Messrs. JOHN WATERER & SON, Ltd., exhibited several pot-plants of Rhododendrons in flower. The variety George Hardy has large, lax inflorescences of pale rose flowers. A number of Japanese Maples were worked into the group (Large Silver Medal).

Mr. AMOS PERRY, Winchmore Hill, London, N., brought many good things, including Tulips, herbaceous plants, alpines, &c. Among the Tulips we noticed excellent flowers of Sultana, an almost black variety; Phlox canadensis Perry's variety is an improvement on the type. It was given a Certificate of Merit by the Committee (Large Silver-gilt Medal).

Mr. G. REUTHE, Keston, Kent, staged, in addition to a large collection of alpine and hardy flowers, a group of Tulips that contained many good things, among which was a handsome scarlet variety named Whistler that received the Society's Certificate of Merit. Among the hardy plants was a collection of hardy Orchids. Iris Susiana was shown well (Large Silver Medal).

Mrs. SMYTHE, Tobarcooran, Carmoney, Belfast, showed vases containing varieties of St. Brigid Anemones.

Messrs. W. & J. BROWN, Peterborough, displayed a number of greenhouse plants, Pelargoniums, Verbena Miss Willmott, Carnations, Roses, &c. (Silver Medal).

Mr. S. MORTIMER, Rowledge, Farnham, Surrey, showed a new Cucumber named Delicacy. It was raised from Matchless × Aristocrat. The fruits are of very dark colour and about 14 inches in length. It received a Certificate of Merit.

For "Gardeners' Debating Societies" and "Schedules Received," see p. x.

Answers to Correspondents

*** EDITOR AND PUBLISHER.—Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

AMARYLLIS BELLADONNA: *C. C.* Your plants need to be taken out of the soil and replanted. This work may be done directly after they have flowered, or in July, when growth having been completed for some time, the bulbs will soon commence to make fresh roots. Before replanting take away the old soil and replace it with a compost of turfy leaf-soil and sand in about equal parts. Plant the bulbs quite 6 inches deep, surrounding each bulb with a little sand. The best position for the Belladonna Lily is one on a border facing to the south, and if the border is close to a hot-house wall, so much the better. When the bulbs have been planted as advised they will not need to be moved again for some years, but after becoming established they should flower better each season.

BERBERIS DARWINII: *R. B., Bucks.* Sow the seeds out-of-doors early in autumn as soon as they ripen, and they will germinate in the following spring.

BOOKS: *W. B. S.* Not specially for market growers, but you will find *The Book of the Carnation*, by R. P. Brotherston, very useful and reliable. It is obtainable from our Publishing Department, price 2s. 9d. post free.

CARBOLIC ACID: *R. L. P.* We have previously recommended that extreme care be exercised in the use of this acid for the prevention of the Cucumber disease. If your house contains a mixed collection of stove plants, it would be safer to remove them before employing the acid.

CATTLEYA: *T. W.* The malformation is not uncommon. The flowers are regular without a lip and the segments are in pairs. It is not uncommon, and has been frequently illustrated in the *Gardeners' Chronicle*.

CRICKETS, COCKROACHES, &C.: *W. W. and C. R., Legion.* These can be destroyed by phosphoric poisoning. Smear some phosphorus paste on to pieces of bread, and place these on the stages and round about the plants. Another good plan for trapping these and similar pests is to roll garden mats and place these on the hot-water pipes under the staging. Allow the mats to remain during the night, and in the morning examine them, when numbers of insects will be found hidden in the folds of the mats.

CROQUET LAWN: *G. H. B.* The present season is too far advanced for an application of basic slag to be effective, and especially as the lawn is required for play in July. We would, therefore, recommend that a manurial mixture be made of three parts of bone-meal and one part of soot, and that 8 oz. of this mixture be applied per square yard on a damp day, or just before rain, that it may be soon washed in. A little sand may be mixed with the manure. We would not advise soil, as this will adhere to the shoes. Next autumn, immediately after the playing season is over, give a dressing of 1 lb. of basic slag to each square yard of lawn, to which finely-sifted soil may be added. A small quantity of basic slag is of no use to begin with, as it is a slowly-acting manure. The second year an application of ½ lb. of basic slag per square yard will be sufficient, and the third year 4 oz. per square yard will be enough. In early spring give an application of soot during damp weather, so as not to burn the grass, or 4 oz. of sulphate of ammonia mixed with sand per square yard will be beneficial.

DOUBLE-FLOWERED GORSE: *J. G.* The common Gorse always suffers more or less after transplantation. It is a good practice therefore to increase the double-flowered form by inserting cuttings in pots in a cold frame, keeping the plants in pots until they are required for planting into permanent positions.

ECONOMIC PLANTS: *A. W. St. Leger, Transvaal.* You had better subscribe to the *Tropical Agriculturist*, published by Messrs. Ferguson, Colombo, Ceylon.

FRUIT DISTRICT: *J. G.* In Cheshire and the neighbouring county of Shropshire a very large quantity of Damsons is grown, and this is probably the nearest district to Liverpool.

HOLLY BERRIES: *R. W. P.* It is unusual for the berries to hang so long. The birds no doubt have found other food plentiful in the neighbourhood.

HUMEA DISEASE: *W. E. P.* The plants are affected with a fungus for which up to the present time no cure has been forthcoming. The moment they are observed to droop at their inflorescences they should be removed, and the plant and soil burned to prevent the disease from spreading.

LEAVES: *G. K. C.* The leaves appear to have been eaten by mites. Dip the plants in tobacco-water, and syringe them with clear water after a short period.

LILY DISEASE: *W. H. G., Churchill.* Too common. Dig up the bulbs and sift flowers-of-sulphur all over them, getting as much of the sulphur between the scales as possible.

NAMES OF PLANTS: *J. K. B.* 7 and 8, both forms of Aubrietia deltoidea; 9, Olearia stellulata; 10, Saxifraga moschata rhei; 11, Pulmonaria officinalis; 12, Doronicum caucasicum.—*J. M.* The Norway Maple, Acer platanoides; Dendrobium nobile.—*A. Y. L.* 1, Nepenthes Mastersiana; 2, N. Wrigleyana; 3, Dendrobium Pierardi.—*J. W.* 1, Kerria japonica, fl.-pl.; 2, Spiraea hypericifolia.—*E. W. K.* Prunus Padus, the Bird Cherry.—*J. H. H.* Kerria japonica, double-flowered var.—*F. B., Balham.* Ornithogalum arabicum.—*Onager.* Woodfordia floribunda.—*H. R.* Odontoglossum × Adrianae. Some check at the roots has caused the Camellia buds to drop.—*J. K., Brandon.* 1, Nephrodium molle; 2, Pteris serrulata cristata; 3, Asplenium bulbiferum; 4, Lastrea filix-mas; 5, Cephalotaxus pedunculata; 6, Thuya orientalis var.—*J. M., Notts.* 1, Dendrobium nobile; 2, Spiraea ariaefolia; 3, Berberis Darwinii; 4, Pyrus Malus floribunda; 5, Eranthemum leuconeurum; 6, Oxalis Bowiei.—*Japonica.* Jasminum pubescens and common Dodder (Cuscuta).—*D. O. W.* Mesembryanthemum acinaciforme.

NARCISSUS, ABNORMAL: *J. C.* Not an uncommon occurrence. It is due to fasciation.

NEWLY-PLANTED VINES: *W. H.* We assume that the Vines were planted not later than October last in a inside border. They will have been cut down in winter to 3 or 4 feet in length, more or less, according to the construction of the front of the house. They should not be allowed to carry more than one or two small bunches of fruit each. Disbudding should be done, leaving only the strongest shoots at distances of about 18 inches apart on each side of the canes. Stop the leading shoot when it has made three or four buds beyond the required length, but otherwise the laterals should be allowed to grow as freely as space will allow to encourage the plants to make an abundance of roots, and thus provide themselves with a good foundation.

PEACH MILDEW: *A. P.* The fruits are attacked by a fungus. Collect and burn all such fruits, and spray the trees and remaining fruits with potassium sulphide in the proportion of half an ounce to a gallon of water.

SEED-POD: *G. W. W. & Co.* Probably the capsule of an Iris, perhaps I. pseudo-acorus.

SYRINGING VINES: *R. P. E.* The general practice is to discontinue the syringing of Vines when they commence to open their flowers. In exceptional circumstances and in certain districts good may possibly result from syringing them again after the berries have set and until they are about to develop colour, but if there is much lime in the water that would be so used, the injury caused by deposit would more than counterbalance the gain. Frequent damping of the surfaces in the house are however essential.

TULIPS DISEASED: *J. P. L.* The plants are affected with the Tulip fungus, Botrytis parasitica. Burn all diseased bulbs, and take away the surface-soil, replacing it with fresh soil mixed with lime.

VARIEGATED HOP: *I. B.* If you have plants already of this variety, you can easily increase the stock by division in the spring.

VINE LEAVES: *Y., Glasgow.* There is no disease present due to a fungus. The spots are the result of some cultural defect. Good ventilation early in the day will have a markedly beneficial effect.

VINES: *Director.* From the circumstances described in your letter it would appear that the medium in which the roots are growing is unsuitable. The soil may be too heavy, and therefore retentive of water, or it may be that no proper system of drainage has been carried out. Nothing short of an examination made on the spot can settle these points.

WISTARIA: *W. R. W.* We can only suggest cold nights and drought at the roots.

COMMUNICATIONS RECEIVED.—R. G. (not of sufficient interest) E. H. W. (photo with thanks)—G. W. B.—Plauen—C. C., Copenhagen—W. G. S.—D. Y.—*Yorkshire Herald*—Gilmurie—E. Horton (next week)—E. H. W.—F. M.—S. L. P.—G. W. B.—A. W. (letter forwarded)—H. D.—A. T.—E. A., Paris—W. W.—C. T. D.—J. C. H.—E. M.—Colonial—H. C.—S. W. N.—H. G.—W. B. G.—W. S.—E. H.—Anxious—A. R. S.—H. B. M.—T. B. B.—W. D. M.—A. L.—E. R. Cecil—F. F.

(For Markets and Weather, see pp. x. and xi.)

THE
Gardeners' Chronicle

No. 961.—*SATURDAY, May* 27, 1905.

CONTENTS.

Abelia uniflora ... 323
Angiopteris evecta var. Teysmanniana, a large specimen of ... 329
Arums (Richardias) growing by the margin of a pond ... 324
Bedding, summer ... 330
Benevolent Institution, Gardeners' Royal 329
Books, notices of—
  Index Filicum ... 330
  L'Hybridation des Plantes 323
  Publications received 334
  Species and Varieties, their origin by Mutation ... 321
Cabbage "Sutton's April" 330
Cabbage, the Chinese . 325
Kew Guild dinner ... 330
Kew notes 333
Meconopsis integrifolia 325
Obituary—
  Hollingworth, J. ... 336
  Marsh, Rev. Theodore H. 336
  Mason, Alfred ... 336
Paths, garden 324
Odontoglossum crispum "solum" ... 322
Paris International Show 328, 334
Peach - trees and manure-water ... 324
Primula, a new, of remarkable colour ... 331
Royal Horticultural Society's awards ... 328
Seed-sowing 325
Simpson, Mr. C., presentation to 329
Societies—
  National Tulip ... 333
  Paris International Exhibition ... 334
  Royal Horticultural 331
Travellers, commercial, in gardens 325
Trees and shrubs—
  Cornus florida rubra 326
Trillium grandiflorum 32
Weather, the recent ... 329
Week's work, the—
  Apiary, the 327
  Flower garden, the 327
  Fruits under glass... 327
  Hardy fruit garden 327
  Kitchen garden, the 326
  Orchid houses, the 326
  Plants under glass... 325

ILLUSTRATIONS.

Abelia uniflora, a flowering spray of 323
Angiopteris evecta var. Teysmanniana growing in the Botanic Gardens, Brussels (Supplementary Illustration)
Odontoglossum crispum "solum" 322
Primula, a new species of, with orange-scarlet-coloured flowers 331
View of the Lily pond in Trelissick Gardens, Cornwall 324

THE MUTATION THEORY.

THE first edition of Darwin's *Variation of Animals and Plants under Domestication*, which appeared in 1868, came in the light of a revelation to gardeners and plant-lovers. Up to that time—we are, of course, speaking in general terms—scattered observations on variations in plants and animals had been recorded in the various journals connected with natural history and gardening; but few had attempted to co-relate them, to compare them one with another, and to deduce from them any general conclusions. Darwin did this, and in consequence the "fanciers," "the florists," the discoverers and recorders of "freaks," found themselves suddenly promoted in their degree to the ranks of scientific observers. Their observations, made, it may be, from little other motive than curiosity or ignorant wonder, were suddenly found to be of value as affording facts in support of the great theory of evolution. Moreover, the heretofore disconnected phenomena were found, when duly co-ordinated, to be not only of theoretical value, but of practical importance also. People even now are to be found who sneer at what they call theory and disparage it in comparison with facts. Such people do not realise that a theory, to justify its name, must be based entirely on facts. By its aid the significance and value of observations are brought to light and their importance gauged. If the facts are imperfectly or incorrectly observed and badly co-ordinated, there can be no true theory till these defects are remedied. Darwin's book, to which we have made allusion, was issued in response to the demand for evidence. His *Origin of Species* had been published some years previously. It roused a storm of antagonism, and even those most disposed to agree with his views, saw the necessity for the publication of the evidence on which the great naturalist had framed his version of the doctrine of evolution.

That evidence was forthcoming, and gradually the conviction was forced on naturalists that the theory of evolution afforded the best explanation of the facts and phenomena of the material world that had heretofore been propounded. Without going into details unnecessary for our present purpose, it will be remembered that what, for convenience sake, we call "species" were shown to have originated from pre-existing species, just as succeeding individuals are derived from their predecessors. The development of new species was shown to be a very slow and gradual process. Variations in abundance are produced, but only those favourable to the individual or to the species in the circumstances in which they are placed at the time, are capable of surviving, the rest succumb and are obliterated. Hence the expression "survival of the fittest"—an expression that does not connote the preservation of what is absolutely the best but of that which is the best adapted under the conditions of time and place to hold its own among its rivals and competitors, or to come to the front in the battle of life. All this is well understood nowadays, and we allude to it merely to emphasise the exceeding slowness with which, according to this view, changes occur, and, as a consequence, the long period of time which is required for the formation of a new species.

Be this as it may, no one knows from experience better than the gardener that these changes are not all so slow in their progression. He is familiar with sudden variations among seedling plants, and especially in buds or shoots, to which variations he applies the word "sports." The explanation of bud-variations, when the conditions have apparently not changed, is not easy. Sometimes they may be looked on as due to reversion, or "harking back" to an ancestral condition which has become "recessive" or latent till some circumstance, we know not what, renders them again "dominant."

At other times, as we have often shown in these columns, the "sporting" is due to the loosing or separation of characteristics previously blended by cross-breeding, or, as would now be said, by the sudden dominance of what had previously been recessive.

The notion that such "sports" are or may be the beginnings of new species, was, till lately, not generally entertained. Of late years, however, Professor Hugo de Vries, who honoured us by his presence at the first Hybridisation Conference held at Chiswick in 1899, has brought forward evidence in support of his theory of "mutation," in which he assumes that new species and varieties are produced from existing forms by sudden leaps. Like Darwin, De Vries has produced his evidences, and they are before us in the shape of a book, to which we desire to call the attention of our readers.*

Professor de Vries had previously published his theory in a book written in German, and entitled *Die Mutations Theorie* (1901—1903). American and British readers will be pleased to have the Dutch Professor's views put before them in their own tongue. The book just published contains the substance of certain lectures delivered before the University of California. The purpose of these lectures was "to point out the means and methods by which the origin of species and varieties may become an object for experimental enquiry in the interest of agricultural and horticultural practice, as well as in that of general biologic science."

Starting from the same class of facts as Darwin did, De Vries endeavoured to gain demonstrative proof of the correctness of his views by methods of practical cultivation and careful record in the form of pedigrees. His attention was first aroused to the subject by the sudden "mutations" he observed in the Evening Primrose Œnothera Lamarckiana. According to the Professor, at a certain stage of its existence this plant (as well of course as others) throws off new varieties which under cultivation are found to behave as species.

These "new species" are not produced once or in single individuals, but yearly and in large numbers. Further, they are, he says, produced only at one period within the lifetime of the species, and probably it is only in a small part of it. This may account for the fact that this wholesale mutation had not hitherto been observed. The plant in question grows here in neglected gardens and waste places almost as a wild plant, and we have seen a large area covered with it under these circumstances without perceiving that amount of variation which would justify the belief that a new species was in process of sudden evolution. But of course negative statements are of no value and we allude to them here only to emphasise what Professor De Vries says as to the periodicity of the change. His own experiments and those of Dr. Macdougal in the New York Botanic Garden and of others leave no doubt as to the existence of the changes. Comparative observation is less important from this point of view than direct experimental evidence, but for all that it would be well to submit the specimens of the supposed new species to botanists in various countries for their opinion.

In olden times it was the genus that was looked on as the unit, then came the species, now it is the turn of the variety. It looks as if the analysts (irreverently termed "splitters") were to hold the fort, whilst those given to synthesis (the "lumpers") were to be deposed.

It is needful, however, to state that De Vries recognises two sorts of species—the "systematic species," which are the practical units dealt with by systematic botanists, the limitations of which are more or less arbitrary, and what he calls "elementary" species, the nature of which is not very clearly defined, which, indeed, may not be recognisable either in the field or in the herbarium, but which may be detected by "pedigree cultivation." Any form, says the author, which remains constant and distinct from its allies in the garden is to be considered an elementary species. This raises a difficulty at once. The species may be constant enough in one garden, it may be very variable in another under different conditions.

---

* *Species and Varieties, their Origin by Mutation.* Lectures delivered at the University of California by Hugo de Vries, Professor of Botany in the University of Amsterdam. Edited by D. T. MacDougal. (London: Kegan, Paul, Trench, Trübner & Co., 1905.)

In the interests of science whatever supplies the nearest approximation to the truth must survive the longest, and in the process of enquiry the pendulum may swing now to one extreme and then to the opposite, according to new discoveries and the more complete explanations of known phenomena. These forms must be named, and herein lies one prodigious inconvenience to the practical cultivator in the constant "mutation" of names, or the equally frequent formation of new ones.

It would seem as if gardeners in practice must, to avoid this inconvenience, adhere to the established nomenclature so far as such a thing exists, and leave scientists to alter their nomenclature as new light dawns upon them or as it suits their purpose. The objection to this procedure is that by so doing we deliberately obstruct or ignore the progress towards the truth, and that involves a responsibility which no conscientious man cares deliberately to face. It is true that "species," as we now think of them, often embrace a whole series of minor forms, which are either deemed to be varieties or are ignored. These may be species in the making. Professor De Vries goes a step further, and declares them to be made. That is a matter of individual judgment. The facts are notorious, their interpretation varies with the experience and the prepossessions of the observer. When, as in Professor De Vries's case, experimental proof is obtained, opinions and prepossessions are put out of court. It therefore behoves those interested to study with all care the merits of Professor De Vries' statements, and to repeat wherever possible his experimental work under as many different conditions as possible. The twenty-eight lectures reported in this volume are obviously too numerous and too diversified as to their contents to allow us to enter into detail concerning them. They comprise the general historical introduction to the subject, the question of "elementary species," of retrograde varieties, of stability, and atavism, cross breeding, roguing (elimination), latency, the discussion of Mendel's law, sports and malformations, adaptations, mutations, fluctuations, experimental pedigree-cultures, artificial and natural selection. The special value of Dr. De Vries' labour resides in the experimental proofs he has demonstrated by systematic and long-continued cultivation.

There are no illustrations. These are not always needed by the botanist who is more or less familiar with the examples mentioned, but to novices, good comparative illustrations would be of great assistance. Bibliographical references again are not supplied as freely as might be desired. Lastly there is what is of course indispensable in such a book—a copious index.

Since the appearance of Darwin's work, covering somewhat similar ground, there has been no book of such interest to those interested in the biological side of horticulture as this, nor one so full of promise in all matters relating to the maintenance of the purity of old breeds or the production of new strains.

ODONTOGLOSSUM CRISPUM "SOLUM" (SYN. CALLISTOGLOSSUM, CRAWSHAY).

This remarkable form, the property of W. Thompson, Esq., of Walton Grange, Stone, Staffs, was originally named "solum" by him, and under that name was noted in your issue of March 25, 1905, on p. 181 by Mr. O'Brien. Though the word "solum" would mark the variety as unique, it occurred to me that "callistoglossum" would better describe it, and when at Stone on April 11 last Mr. Thompson acceded to my request to be allowed to rename it, which I now do. The extraordinarily deep, solidly coloured lip of intense claret-purple-brown, and

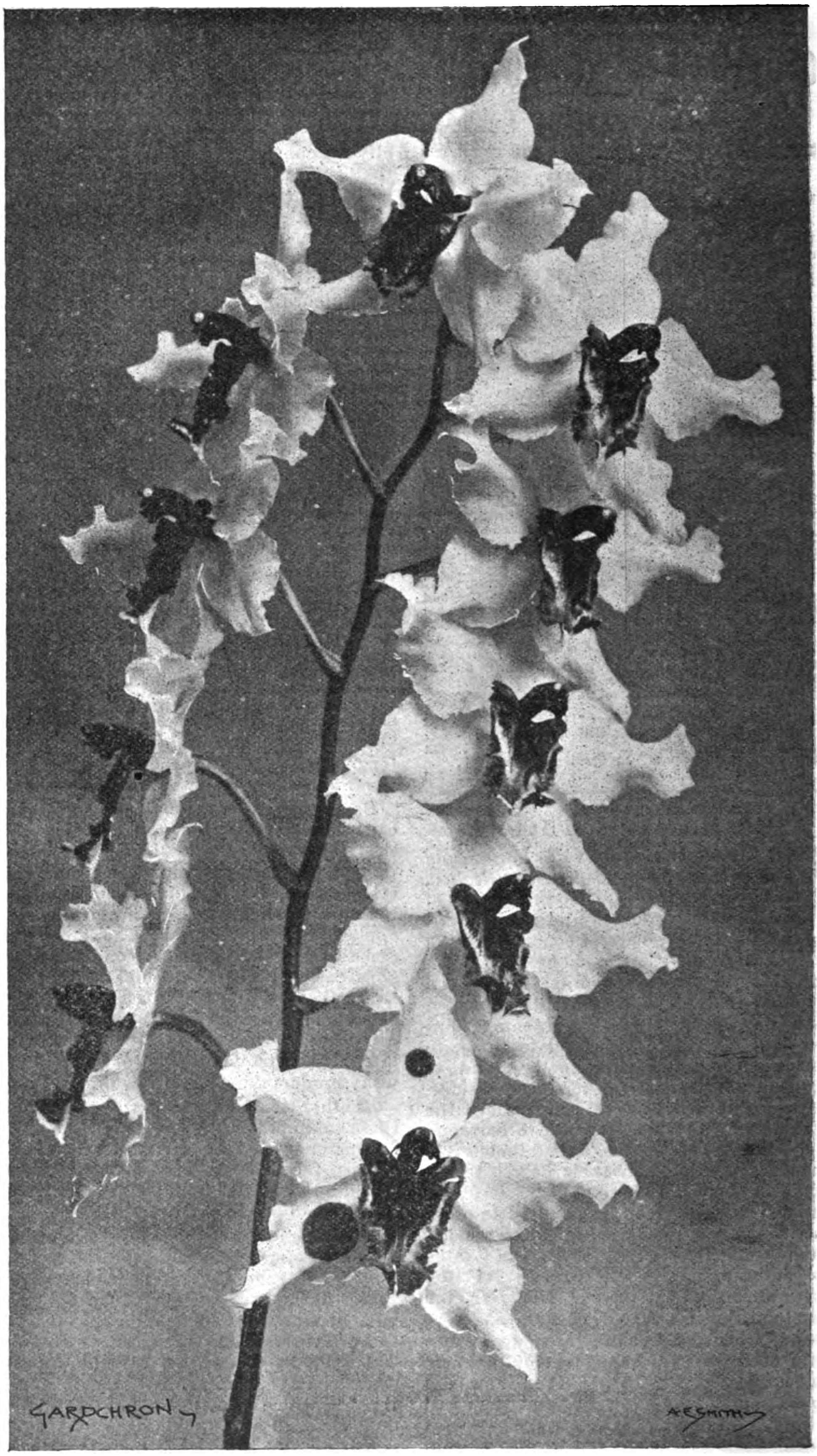


Fig. 134.—Odontoglossum crispum "solum" (syn. callistoglossum, *Crawshay*).

the column, the whole of which, down to the very base, are the distinguishing features of this remarkable form. There is one more similar coloured spot in a sepal of the second bloom (or left side), otherwise it is unspotted. Mr. W. Stevens's photograph reproduces it perfectly. *De B. Crawshay.*

[The plant having been exhibited and recorded under one name, that name must be retained; but if individuals elect to employ another name, it must be as a synonym only, which others are not bound to accept. If the abbreviation "var." is used, the termination must be feminine—"a"; if the abbreviation is not used, the neuter "um" is more appropriate. This seems pedantic, but it is well to have rules and to stick to them. ED.]

ABELIA UNIFLORA.

THE genus Abelia consists of half-a-dozen species, natives of the Western Himalayas, China, Japan, and Mexico. They are all showy, decorative, free-growing shrubs, but are rather too tender for general cultivation in the open garden except in the milder parts of the country. In such mild localities few plants are more easily grown, and they make excellent subjects for the shrubbery border or as single specimens on the lawn. In many parts where they fail to thrive in the open they will do so against a wall, such species as A. floribunda and A. chinensis flowering profusely when treated in this way. In all cases it is essential to have the border in which they are grown well drained, as they require abundance of moisture at the roots at all times, but especially during the summer, when growth is taking place. They do well in almost any class of soil, provided it is of a porous nature.

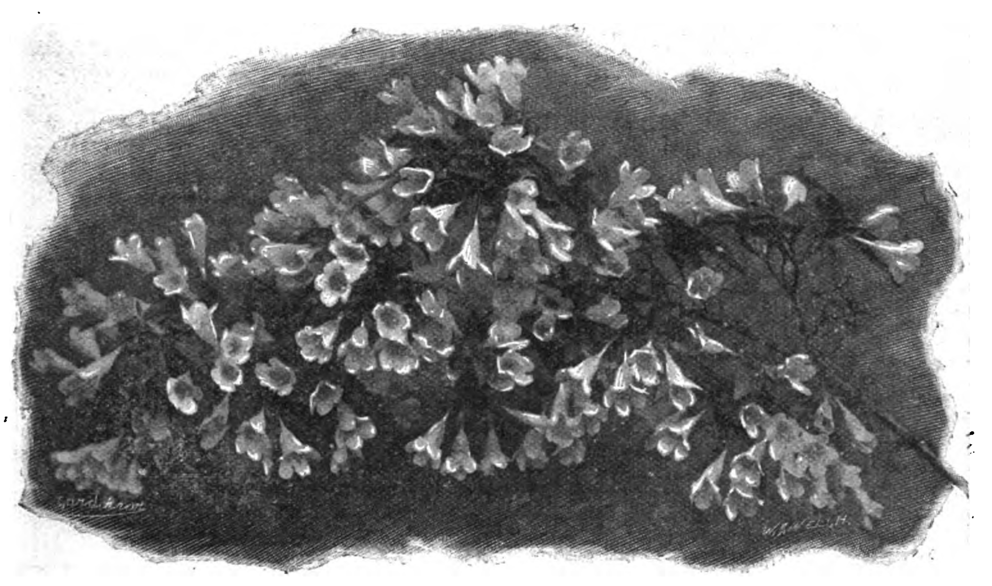


FIG. 135.—ABELIA UNIFLORA: FLOWERS WHITE, TUBE WITH YELLOW VEINS.

By well thinning-out the old growths after the flowering period is over, the plants should be encouraged to make strong shoots from the base each season. Apply weak liquid or chemical manure to the roots of the plants until growth has finished; the plants will then furnish a profusion of flowers during the following summer. Propagation is easily effected by cuttings made from half-ripened growths, and inserted any time during the end of summer or autumn.

The illustration at fig. 135 of A. uniflora was prepared from a plant in the garden of F. D Godman, Esq., of Horsham, Surrey, where, at the time of my visit in May of last year, a large specimen plant was in full flower. It was growing in partial shade amongst Rhododendrons and other shrubs on the bank of a small brook, and formed a spreading bush some 7 or 8 feet in diameter. and about 6 feet high, the long arching growths being loaded with flowers. Although its flowers cannot compare individually with those of A. floribunda, either in size or in colouring, yet they are produced so abundantly that the whole plant becomes a sheet of white, many of the branches arching over to the ground with the weight of flowers. The habit of the plant is to send up strong growths each season from the base, the upper portions of which give off numerous short axillary branches from which the flowers are produced during the following season. The flowers are shortly pedicellate, and are borne in pairs on the ends of the short branchlets. They are pure white in colour, with the three lower lobes and the throat of the corolla prettily net-veined with yellow. They are three-quarters of an inch in diameter and one inch in length. A. uniflora is a native of Japan, also of the Chinese provinces of Fokien, Hupeh, Szechuen, and Chungking. It is figured in the *Botanical Magazine*, t. 4694; *Botanical Resister*, 1846, sub.-tab. 8; also under the name of A. serrata in Siebold and Zuccarini's *Flora of Japan*, vol. i., p. 76, t. 34. In the 1900 *Supplement to the Dictionary of Gardening*, A. serrata is erroneously referred to as A. chinensis. *C. P. Raffill.*

KEW NOTES.

LISSOCHILUS UGANDÆ, *Rolfe.*—A new and exceedingly pretty species from Uganda is now flowering in the warm Orchid-house. The tubers were collected by Mr. J. Mahon, late Curator of the Botanical Gardens, Entebbe, Uganda; they were sent to Kew at the same time as L. Mahoni (see *Gardeners' Chronicle*, p. 250) namely, at the latter end of 1902. L. ugandæ is a much smaller-growing species than the one named in honour of the collector. It has erect linear, acuminate leaves, which are from 1½ to 3 feet in length, from ½ to 1 inch in width, and somewhat coriaceous in texture. The flower-scape is 3½ feet in height, and about as thick as an ordinary lead-pencil. The flowers are rather closely arranged at the apex of the scape, the total number on the specimen now in bloom being twenty-one, all of which are fully expanded, those which were first open some weeks ago being still quite fresh. The sepals are spatulate in form, the two lateral ones being twisted in such a manner as to arrange them in an upright position beside the dorsal sepal; they are 1 inch in length, light yellow in colour, and tipped with red-brown. The petals are oblong, rather less than an inch in length, curved closely downward over the labellum, and of a bright yellow colour. The lip is also yellow, prominently crested, and prettily marked with bright green veins, reminding one of the markings in the flower of Chloræa virescens.

MEDINILLA MAGNIFICA, *Lindl.*

Several handsome specimens of this lovely Melastomaceous stove plant are now making a fine display in the Palm-house, one large bushy specimen measuring 6 feet in height and about the same measurement in diameter. It has upwards of sixty of its large pendulous rose-coloured inflorescences.

MEDINILLA MAGNIFICA VAR. SUPERBA.

This variety is also flowering in the Palm-house. It differs from the type in having larger leaves, and also a larger inflorescence. The plant now in bloom has a measurement of about 4 feet each way, and is carrying twelve large racemes, the flowers of which are of the same colour as those of the species. Some of the racemes are 16 inches in length, and the stalk by which they are suspended 8 inches in length, giving a total of 2 feet for the complete inflorescence, which in general outline resembles a bunch of Grapes. The leaves of this variety are sometimes as much as 15 inches long by 9 inches in breadth. To illustrate the rapid growth of this fine plant, it may be mentioned that this particular specimen two years ago was a small plant with just two leaves, and contained in a 3½-inch pot. *W. H.*

BOOK NOTICE.

L'HYBRIDATION DES PLANTES. Par Raphael de Noter. (Charles Amat, 11, Rue Cassette, Paris.)

THE author of this little paper-covered volume of about 180 pages is a writer who has already contributed quite a series of books on gardening and allied subjects. The one now under notice is perhaps a little more pretentious in style than some of the others, which are but pamphlets. *L'Hybridation des Plantes* is a compact little manual that will no doubt be useful to gardener and amateur alike. Its aim is to point out clearly all the operations connected with the cross-fertilisation of flowers so as to produce novelties of improved and varied forms. There are in the opening chapters various instructions concerning the structure of flowers in general, the best subjects to deal with, and details as to the pollen, its application and action.

Then follow thirty-four chapters, in which plants are classed according to their families; and here of course the subject-matter deals particularly with the flowers included in each heading. Growers of some of the popular subjects who understand French may find such a work interesting and instructive, inasmuch as it is intended for those plants that will grow in the north of Europe. At a glance we notice that such things as Asters, Dahlias, Chrysanthemums, Pelargoniums, Tulips, Lilies, Cyclamens, Violas, &c., are all the subject of instructions; while there are many other plants in the various families mentioned about the cross-fertilisation of which less is generally known by the amateur, but which it will be very acceptable to have in so compact a form as this little 12mo volume supplies. The author has not been sparing of illustrations explanatory of the text, and the book, which is neatly printed, costs but a couple of shillings.

TRELISSICK LILY-POND.

OUR illustration (fig. 136) gives an excellent view of a pond in Trelissick Gardens, the banks around which are crowded with plants of the common white Arum (Richardia). Mr. Sanguin, who sends us the photograph, says: "Several views of this pond have already been published, but I think the accompanying photograph gives a better idea of the luxuriant and extensive growth of the Arums than either that has previously appeared. The unbroken border of Arums covers considerably over 300 yards, and when at their best from 7,000 to 10,000 flowers may be seen open at one time. The deep water-side is margined with hybrid Nymphæas, and the land side is backed by immense masses of Gunnera manicata, Pampas Grasses, Golden Willows, Bamboos, Japanese Irises, and many other water-loving plants, amongst them being great numbers of a very fine strain of Primula japonica of all colours. The Arums extend and propagate themselves; large pieces often break away from the sides and are blown across the deep water into the shallow mud at the upper end of the pond, where they anchor themselves, and grow well without further care or trouble." *W. Sanguin, Trelissick, Truro.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

MANURE - WATER AND PEACH - TREES.—Mr. Moore is of opinion "that if well-made borders consisting of loamy, naturally fertile soils, even when the staple is light, sandy, and shallow, are dressed annually with light, well-rotted stable-manure, but little more is required beyond affording plain water several times during periods of drought in the months of July, August, and September," adding, "that in wet summers even these applications are better withheld." Mr. Moore says, "he has in his mind only trees grown in the open-air," adding, "that the conditions are very different under glass, and that heavy applications of water more frequently afforded may be called for to assist the growth of shoots and give greater size to the fruit if the crop be an abundant one." I hope Mr. Moore will pardon my saying that it is owing to the fact of such views as he has advocated regarding the cultural requirements of Peach and Nectarine trees growing in the open-air—i.e., against walls having south and west aspects—having been carried out in many parts of the country by free-and-easy-going people (I will not say fruit-growers), that the bare, stunted, short-lived, unproductive specimens of the Peach that are frequently met with are to be attributed. This condition of the trees is put down to every cause but the right one. Of the correctness of this assertion I am thoroughly convinced, as the result of long and extensive experience in, among other branches of gardening, Peach-culture in the open. I had in my charge about 250 yards of walls from 9 to 12 feet high, and having south, south-west, west, and even east aspects, furnished with healthy, fruitful trees from base to summit. As soon as the pruning and training of the trees were completed, the surface of the soil was pricked over with a digging-fork to the extent of about 3½ feet or so from the stems of the individual trees on either side and out from the wall, and then mulched with well-rotted stable-manure and afforded a good watering of clear water, applied with the hose from a streamlet close by. This was done some time in February, the operation being repeated at frequent intervals up to within a week or two of the ripening of the fruits. Doses of liquid-manure took the place of plain water after the fruit had stoned, and in some cases before. The results in the way of vigorous, free-growing trees bearing heavy crops of extra large, well-ripened, luscious fruit amply repaid the care and labour bestowed upon the trees in the matter of watering, disbudding the young growths in due time, and keeping the foliage free from the attacks of aphis and red-spider. I know as a fact that the borders in which Peach trees are growing in front of walls facing south or south-west are as a rule "dust-dry," a foot or 15 inches below the surface, 4 or 5 feet away from the wall. In the process of excavating soil for footings for a Peach case 5 feet wide from the wall, I found this to be the case in the autumn following what might very well have been called a wet summer. This discovery led to my giving additional consideration to the natural condition of the soil, say a foot below the surface of the borders in front of south and even west walls, and afterwards induced me to make frequent applications of water to the roots of the trees growing therein. It is unreasonable to expect the soil of such borders as I have mentioned to benefit to any material extent from rain, say to a width of 5 feet from the wall. As the surface is hard and sloping southward, the rain falling thereon runs off into the looser soil farther out from the wall, even when the rain comes from the south. When it comes from any other point it has very little effect beyond wetting the surface of the soil. Moreover, consider the great power of absorption possessed by bricks and mortar, and the additional drainage thereby afforded! In short, it is almost impossible to keep the soil about Peach trees planted in well-drained borders or holes in front of the walls indicated above, too wet at the roots. The cause of most, if not all the draw-backs complained of from time to time in connection with unsuccessful Peach culture out-of-doors may truthfully be put down to the opposite extreme, the soil being kept too dry. Mr. Moore, as quoted above, says that under glass culture the conditions are very different from those in the open-air, and that therefore more free applications of water at the roots are necessary to assist the growth of shoots and swell up the fruits. True, the conditions are different in so far that the trees are growing under glass, and that a more uniform atmospheric temperature can be afforded them than it would be possible to give them in the open; but the cultural requirements as regards moisture at the roots, the application of manure-water at short intervals to assist the growth of shoots, and to give greater size to the fruit if the crop be—as should always be the case under good management and generous treatment—an abundant one, are the same as in the case of trees grown in the open-air. It is quite wrong to infer that the flavour of extra fine specimens of the Peach suffers in consequence of the fine size of fruit and the great depth of flesh. Can any practical reason be adduced to show why the flavour of well-grown fruits of, say, Hale's Early or Royal George Peach, turning the scale at from 12 to 16 oz., should be inferior in quality to that of fruits of the same varieties weighing respectively 10 and 12 oz.? Your correspondent objects to affording liquid-manure to the roots of lightly cropped Peach-trees upon imaginary grounds—namely, the supposed production of "strong willowy shoots that never ripen." No practical fruit-grower would allow such shoots to form part of his tree; he would cut them clean out. In the last paragraph of your correspondent's letter, gardeners are recommended, instead of following the advice given by Mr. Muir and myself in the *Gardeners' Chronicle* for April 1, to empty the contents of their overflowing manure-water-tanks on to such gross-feeding vegetables as Celery, Asparagus, Cabbages, Cauliflowers, and the like, and to aged Pear and Apple-trees. Surely this advice will not find many followers. To water Celery, Cabbages, &c., with the contents of manure-water-tanks in the autumn, winter, or spring—what for? *H. W. Ward, Rayleigh.*

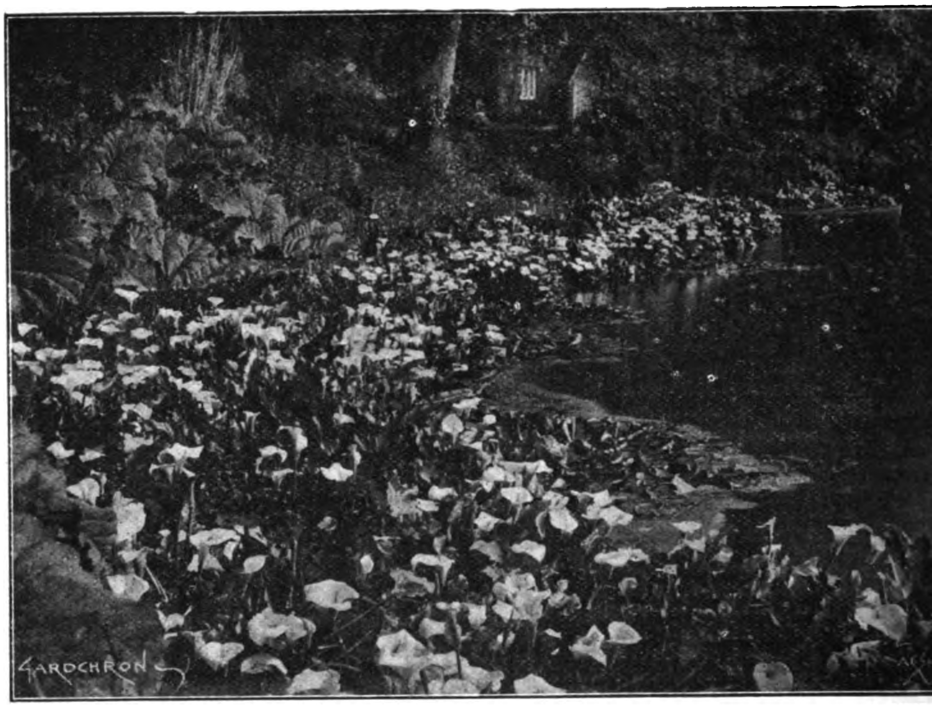


FIG. 136.—RICHARDIAS GROWING IN THE OPEN AT TRELISSICK, CORNWALL.

GARDEN PATHS (see p. 226).—I must take exception to the advice given to make garden paths and roads of asphalt, and to the unnecessary expense involved in the method of making the roads recommended by Miss Turnor. At one time asphalt was popular, especially for use upon small paths, but it has fallen into disrepute owing to the objectionable smell it has during summer, and in the case of roads to the slippery nature of the surface during frosty weather. No material can equal gravel when properly laid, except it be pulhamite, and in some cases this is objected to on account of its hard surface and the cost of laying. There are few gardens now into which gravel cannot be brought by road or rail. That gravel paths are not always satisfactory is often because they are laid badly or laid at the wrong season of the year. In regard to the cost of making roads, Miss Turnor says excavate the road 2 to 4 feet deep, and fill in with stones, &c., one-third; this, taking the maximum depth, means 1 yard [1⅓ feet, ED.] deep of stones, and a third of smaller material such as broken granite. In this neighbourhood 1 cubic yard of granite costs 13s. Who would think of putting finer material to the depth of 1 foot on the top of a yard [1⅓ ft.] of coarse stones! If the base of the road when made is formed in the same manner or shape as the finished surface, and a drain laid on each side of a wide road where necessary, a depth of 18 inches at the most is ample for drainage, placing of course the rougher material at the bottom, and even breaking the surface stones as they lie is sufficient. Before putting on the surface layer of gravel roll the stones thoroughly with a heavy roller to get the necessary shape and to fill in the interstices somewhat, so that less gravel will be swallowed up in them than would be the case where the gravel is laid on the loose surface. This is a much more economical method of road making than that advocated by Miss Turnor, and is similar to that which was carried out here twenty-five years ago. The roads have since borne all kinds of heavy traffic, such as traction-engines with 12-ton laden trucks, and have never required more than a surfacing of gravel very occasionally. Much depends upon how the base-water is taken away, as well as how that from the surface is treated. In the case of wide roads it is best to have a drain on each side, but in roads of not greater width than 10 feet, especially in ordinary garden-paths, one drain is sufficient, and this should be made in the centre. The catch-pits at the side should be properly made, and served with smaller outlet-pipes to the main drain. This system is a saving of one large drain, as well as labour. Socket or flanged pipes should always be used and put together with cement for the main drains. For the connecting drains ordinary land pipes may be employed close to the catch pits, for main drains where there are roots near the ordinary land drain-pipes with no socket quickly become choked with roots. It is surprising how quickly these will penetrate the small space between two pipes. On carriage-drives with a steep gradient, where the sides are sure to be washed with heavy rains, a channel should be formed on each side with cement and rough clean washed gravel to imitate the colour of the road as nearly as possible. These channels should be made 10 inches wide and about 3 inches deep in the centre. Such channels answer capitally if catch pits are arranged in them at convenient distances to carry off accumulated water. *E. Molyneux.*

MECONOPSIS INTEGRIFOLIA.—Judging from what "E. H. W." says in his article in the *Gardeners' Chronicle* for May 13, and taking into consideration our own observations on the subject, there seems no room for doubt that the plants grown under the above name by Messrs. Veitch and by the Co-operative Bees (late Messrs. A. Bee & Co.) respectively are dissimilar in some more or less marked details. The most notable difference is the varying length of the style. In the case of the plants which flowered at Ness last year, the style was in no instance less than five-sixteenths of an inch in length, while the longest noted was quite three-quarters of an inch from the base of the stigma to the apex of the capsule. These measurements, however, must be taken only as approximate, since the line of demarcation between style and capsule was never sufficiently well marked to enable one to determine *exactly* where the one finished and the other began. A second slight difference is visible in the stigma —that of our plant is more conical in shape than flat; while a third distinction is noticeable in the capsule, which in the illustration on p. 291 is decidedly angular, and only sparsely hairy, differing in these particulars from our plants, which have more rounded seed-vessels densely clothed with stiff long hairs. There is surely nothing in the description quoted from the *Gardeners' Chronicle* for September 17, 1904, to warrant the application of the term "scapigerous" in describing the inflorescence of our plant. Certainly the portion italicised might be applied in a description of the "Iceland Poppy," but no one would venture to say that the inflorescence of Papaver nudicaule was "scapigerous." Surely the inference is mistaken. We have nowhere made the statement that "Meconopsis integrifolia will not seed in England." In the article accompanying the excellent coloured illustration of our plant in *Flora and Sylva*, part 24, Mr. Bulley says: "My plants, even with artificial pollination, have *so far failed* to produce good seed; and from Messrs. Veitch's recent advertisements of "seeds collected in China," it seems possible that they have had no better luck in their drier and more southern position." Should Messrs. Veitch be successful in collecting seed from home-grown plants this year we shall be more than glad, since it would foster the hopes we entertain of saving seed from our "variety," as well as from M. grandis, which, though so far a good perennial with us, has not developed any seeds. There are other apparent differences between our M. "integrifolia" and that imported by Messrs. Veitch, which are only noticeable when the plants are seen growing side by side as we have them here. The chief of these are, first, the more numerous and narrower leaves produced by our plant; secondly, the colour of the hairs on the leaves. While the Chinese plants of Messrs. Veitch are clothed with brownish hairs, the hirsute covering on the leaves of our plants from Central Asia, especially when the latter are about to flower, presents a charming silvery, silky appearance. Referring to the note on the root-system of the plants at Langley and of the dried specimens, it may be interesting to know that our plants produce a decided "tap-root." In the case of our strongest plant, which succumbed after flowering, the "tap" was some 3 or 4 inches in length and rather over 1 inch in diameter in the thickest part, which was just below the tuft of leaves. A continuation of the "tap-root" formed the short stock from which were produced the long, narrow lanceolate leaves and solitary-flowered peduncles. The characteristics given by "E. H. W." as belonging to M. grandis do not apply to the plant grown here under that name from seeds supplied by Dr. Prain. The flowers are of the loveliest shades of blue imaginable; upon a ground colour of pale pure sky-blue are markings and veinings of a lovelier deeper shade. The leaves are not toothed, but have quite entire margins, while the capsule and stigma closely resemble those of the plants raised from seeds collected by the Koslov expedition in Central Asia, and sent to Mr. Bulley under the name of Meconopsis integrifolia. Trustworthy illustrations of Messrs. Veitch's M. integrifolia may not be available [!] but such reproductions as we have seen of sketches taken from the plants exhibited at the Horticultural Hall on April 25 last, show Tulip-shaped flowers with somewhat short segments, while the illustration of our plant in *Flora and Sylva* excellently portrays the magnificent open blooms, which varied from 5 to 7 or 8 inches in diameter. At the base of the petals in the flowers of our plant is a dark ring hidden by the mass of orange-coloured stamens. It would be interesting to know if this feature is present in the flowers of Messrs. Veitch's plant. Lovers of this genus will be glad to know that the seemingly impossible has been achieved, and the reputedly loveliest species of this beautiful genus, Meconopsis bella, is at present known to be past the seedling stage in one or two places, and is actually coming into bloom in the garden of one notable hardy plantsman. *The Co-operative Bees, Ltd., Ness, Neston, Cheshire.*

—— We have a plant of Meconopsis integrifolia in flower in these gardens which enables us to lay claim to be one of the first to have it in bloom in a private garden. An interesting point about the plant here is that although I tried to be generous to it by putting it into a compost of equal parts of loam and leaf-mould, with a sprinkling of sharp sand, it never moved, so I removed it from the above compost and put it in a really stiff clay soil. No sooner was it planted in this latter than it started into growth. I should like to hear other growers' experience with it. *J. C. Smith, The Gardens, House on the Creek, Maidenhead.*

TRILLIUM GRANDIFLORUM.—The note on this plant on p. 308 induces me to ask why it is not more often seen naturalised in Great Britain. Beautiful as it is in the garden border, it is far more so when allowed to spread through natural woodland. No exotic takes more kindly to our climate and soil. Planted out in a thick wood of deciduous trees, where the soil is either peaty or composed largely of decayed leaves, it thrives like a weed, spreading freely both from the root and by seed. It enjoys exactly the same conditions as the Lily of the Valley, but is not so thoroughly immune as is that plant from attack by rabbits. They nibble it occasionally, but do not persevere if other food is abundant. *Herbert Maxwell.*

ARE COMMERCIAL TRAVELLERS A NUISANCE?—I think competition is too keen among horticultural travellers for many of them to indulge in such erratic behaviour as "A Foreman" describes, p. 315. I do not think such unpunctuality would bring them many orders. Their expression of opinion on the condition of things as they go through the garden, if adverse, shows an absence of tact on their part, and doubtless when "A Foreman" becomes "head" he will be able to estimate such observations at their proper worth. *T. H. Slade.*

SEED-SOWING.—In reply to Mr. A. Dean's note on p. 316, although I did not state that darkness was productive of indifferent germination, I do maintain that seeds raised in semi-darkness are much more liable to die after germination has commenced. I go further, and maintain that light is absolutely necessary for perfect germination. Mr. Dean gives two examples to support his contentions, but the subjects he mentions will develop to a certain stage under any conditions, provided the seeds are kept moist. I have not grown Mustard-and-Cress for market purposes, but for many years past I have raised some each spring for home use. I simply sow the seed thickly on the surface, thoroughly soak the soil and the seeds, and after standing them in the path or under the stage for a day, I place the boxes on a shelf fully exposed to the light, where the seeds start away evenly and develop no sign of the slimy damping-off which I have seen in those grown under shaded conditions. We have only to look at natural conditions to prove the advantage of light. A year or two ago I was through a wood where the undergrowth was very thick and the ground quite bare of vegetation beneath the heavy shading. The wood was cut down shortly after my first visit, and on going over the same ground a few days ago I found innumerable seedling plants. Why did older raisers of Ferns so often fail? Simply because they covered their seed-pots too densely. I have sown some thousands of pots of Fern-spores, and only when the spores themselves were faulty have I had failures. On one occasion I placed some pots containing spores in such a position that the light fell on about half the surface of the pot only, and they happened to remain for a longer period than usual before being examined. When I did give them attention I found the spores had germinated evenly on the part exposed to the light, while there was no sign of germination of those on the spot where the light was excluded, although after being fully exposed to the light these spores also germinated. The first time I sowed seeds of Centaurea candidissima, I was instructed to put them in a frame and cover the frame with mats. I did so; the result was failure! Later on I sowed again, and this time placed the seed boxes on a shelf, where I should think every seed germinated, and what is more important lived after they had started. I know there is a medium in all things, and I should not expect to succeed with tender seeds in the full glare of the sun at midsummer, or even before it was quite so powerful. Mr. Dean asks if light can penetrate to Peas or Beans when placed 2 or 3 inches below the surface. I answer No. The nourishment provided in the cotyledons is sufficient to bring them through to the surface. I remember once being told by a gardener that some seeds he had sown failed to germinate, but after being emptied out on a heap the seedlings came up. This was an instance of failure through burying seeds too deeply. Many more might be given. *A. Hemsley.*

A NEW (?) VEGETABLE.—Paragraphs are in circulation as to the Kwantung or Chinese Cabbage. There is nothing very new about it. It crops up now and again, but as it does not seem to be adopted in this country, we take it it has been found wanting. At the same time the apathy and disinclination on the part of cultivators to try anything out of the common routine are really astonishing. (See *Gardeners' Chronicle*, May 19, 1888, p. 619.)

TREES AND SHRUBS.

◆

CORNUS FLORIDA RUBRA.

Of the many handsome Dogwoods which have been introduced, this variety is quite distinct from any which I have as yet seen in flower, and for its colour alone it should find a place where flowering shrubs are grown. Although named rubra, it would, I think, be best described as pink, as it shows more of that colour than rose. The four-petalled flowers are veined throughout a beautiful pink, the other portion of the flower being of a lighter shade. It is quite a distinct object just now among flowering shrubs by reason of its colour, the flowers attracting attention at once as they appear among the unfolding leaves. This handsome Cornel growing over a groundwork of the white Polemonium gives a charming effect, and it would be equally effective if grouped sufficiently far apart, with a groundwork of some other dwarf-growing herbaceous plant of a suitable colour. *T. H. Slade, Poltimore.*

The Week's Work.

◆

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Odontoglossum grande.—This large showy Odontoglossum, after a long rest, is now recommencing to grow. It will, however, be some time before root-action occurs, but that the roots may have fresh, sweet material to enter as soon as they emerge, pick away the old peat and sphagnum-moss, and replace with fresh materials. The plants thrive in well-drained pots or pans, and a couple of inches deep of turfy peat and sphagnum-moss. Place them in a moist shady part of an intermediate-house, and afford only a little water until the floral spikes appear in the new growths, when liberal supplies will be needed. When the flowers have passed and the pseudo-bulbs are made up, the commencement of a long dry rest should be instituted. Large plants having many old leafless pseudo-bulbs may be broken up, only retaining two or three bulbs to each progressive portion. Old pseudo-bulbs are of no value to any Orchid, the idea of their acting as a storehouse of food for the younger portions having long ago been exploded. Their retention merely pauperises the younger generations. O. Insleayi and O. Schlieperianum need similar treatment to O. grande, the former species, however, requires somewhat drier conditions during the growing season.

Phaius tuberculosus.—The species formerly so-called has been found to be P. simulans. The new growths are now emitting roots, hence fresh material should be given into which they may ramify. Owing to the spreading habit of the plant, it is difficult to confine it to the limits of a pot or a pan, but it may be kept in suitable bounds by training the growths upright to a few thin pieces of teak fixed in the pot or pan. The receptacle should be three-parts filled with drainage, the remainder being occupied with a mixture of equal parts peat and moss, a sprinkling of semi-decayed Oak-leaves, and some small crocks, surfacing the whole with a layer of chopped moss an inch in depth. When repotted place the plants in a well-shaded position in a warm intermediate-house, and keep them well supplied with water, both at the root and overhead during the growing season, but after growth has finished limit the moisture to sufficient to keep the moss alive. A too close atmosphere will cause the young growths to damp off, and if thrips are permitted to gain a presence they will also ruin the plants.

Phaius grandifolius, P. Wallichii, and other closely related species will need attention now that their new growths are developing. A renewal of the surface materials only will suffice where the drainage is in good order. Should repotting be decided upon, carefully remove the old materials from the brittle roots, replacing the latter in the new pots, and insert crocks amongst them to half the depth of the receptacle, then finish by filling to near the rim with a mixture of two parts lumpy peat, one of fibrous loam and moss, and sufficient sand with small crocks to keep the whole porous. These plants should not be stood on an open-work staging, but preferably on one that is covered with some moisture-holding material. Newly-potted plants must be very carefully watered until they are quite re-established, and others not repotted must not be given over-liberal supplies until they are rooting freely. Hybrids of the above species, also those of which P. Humblotii is one of the parents, may be grown with the above in a warm intermediate temperature. It is essential that sufficient ventilation be provided, as a stagnant atmosphere causes spotting in the leaves and sickly growth. They all need moderate heat, sweet pure air, ample but not dense shade, and a fairly moist atmosphere. The Phaio-Calanthes, of which there are several distinct and useful forms, may be grown in a somewhat warmer house than the Phaius parents, but otherwise they should be afforded similar treatment. They also appreciate a small portion of decaying leaves in the rooting medium.

Exhibiting Orchids.—Most owners and growers of Orchids generously support the many horticultural shows held during the year, and a word of advice may be given to those with less experience. Plants intended for exhibition should be allowed to become moderately dry before leaving their home quarters, and again, on their return, no water should be given for a day or two. If practicable, place the plants for a few days before the show in a compartment where drier and cooler conditions prevail. It is a curious fact that Orchids of the Cattleya tribe suffer the most readily from exposure at an exhibition, though the injury may not be apparent for weeks afterwards. Care in thrusting stakes into the pots should be observed, and never insert a pot in a larger one and then pack round with wet moss; dry wood-wool is far preferable. Whenever possible tie the spikes in their natural position, for often when a drooping spike has been tied upright the blooms, when released, fail to fall back into their former position.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Tree Carnations.—These should be ready for placing out-of-doors where they may enjoy the full benefit of sun and air, but require protection from rain. Sufficient garden lights for covering them should therefore be kept handy. If any of the plants have not yet been potted, let this work be done without delay. Such plants will require to be kept in a close frame for a week before being removed out-of-doors.

"*Malmaison*" *Carnations.*—Our stock of two-year-old plants are now furnishing us with a quantity of well-developed flowers. It is upon these same plants that we depend for our stock of layers for the season, and as soon as the different varieties pass out of flower steps are taken to proceed with the layering. To prevent a check in any form, the plants must receive a liberal supply of water at the roots, with frequent damping of the stages between the pots. They should also be shaded from the direct rays of the sun and allowed a free circulation of air between them. If these conditions are not strictly complied with red-spider soon becomes prevalent, and once this pest obtains a firm hold it is difficult to eradicate without spoiling the appearance of the foliage. Plants that were layered last year will require some support to prevent the foliage becoming broken, but the staking of the shoots singly should be deferred until the plants are repotted after flowering. The process of layering is an important matter, on which depends to a great extent successful cultivation in the future. My practice is to select a brick pit containing good soil in which the plants to be layered are planted, allowing sufficient room between the different varieties to avoid confusion of names. A quantity of old potting soil is passed through a ½-inch mesh sieve and placed round the plants, allowing sufficient soil for drawing over each growth when layered. The pit is kept close and shaded until signs of rooting in the layers is apparent, when as soon as they have made sufficient roots to support themselves they are separated from the plants and allowed a week before being lifted and potted.

Begonia Gloire de Lorraine.—Early-propagated cuttings intended for specimen plants should not be allowed to receive a check by becoming pot-bound, but should be well rooted before being shifted into larger pots. They should be shaded from the sun, syringed frequently, and grown in an intermediate temperature. These plants should not be pinched at any time, the stake will be sufficient, to which the growths should be "slung" rather than tied in tightly. The latest batch of cuttings should be inserted now. B. Agatha compacta makes a small and compact plant, and is valuable for furnishing or edging purposes. Grown in 60-size pots it is useful for decorating the dinner-table, &c.

Callicarpa purpurea.—Plants may be propagated from cuttings inserted now, or from seed gathered from the ripe berries and sown in the autumn. This plant when grown under warm and moist conditions retains the freshness of its foliage, while its purple berries are very effective and pleasing.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Cauliflowers.—Smaller-growing varieties such as Extra Early and First Crop, grown in 8-inch pots, will now be supplying compact "heads" of good quality. These when about the size of a teacup are in their best condition, and eminently suitable for table purposes. We are now making another sowing of these vegetables, while seeds will again be sown at about the end of June in order to maintain a succession, as every endeavour is made to continue the supply of these and other varieties, such as Early London, Walcheren, Autumn Giant and Self-protecting Broccoli, throughout the season. As a succession to Autumn Giant sown in April, another sowing of this variety has just been made.

Seakale.—In order to secure good crowns from root-cuttings in one season for forcing, all but the strongest growth should be removed. Plants in permanent beds that have not been required for forcing, and that have been allowed to develop their flowering stems, should be cut hard back in order to secure suitable crowns for forcing purposes. Use the hoe freely in such plantations.

Tomatos intended for planting in outside borders early in June should now be freely exposed on some warm sheltered position facing south, but not in too close contact with trees and shrubs. Remove all side shoots or laterals as they appear. This work must be done frequently during the growing season, in order that the energies of the plant may be directed toward the production of flower-trusses, and not to excess of growth. The practice of removing the leaves has nothing to recommend it, as it deprives the plant of its organs of food-elaboration, and retards early maturation of the fruit.

Cucumbers.—Frames from which crops of early Potatos have been cleared may with advantage be planted with Cucumbers. Young, vigorous plants will soon become established in these structures, and the same soil in which the Potatos have been forced, with the addition of a quantity of partly-decayed stable-droppings, will suit the Cucumber admirably. When first planted they should be kept fairly close for a few days, and during bright sunshine shaded lightly with thin canvas. Cucumbers require plenty of light and moisture; the atmosphere in which they are grown should also contain abundant moisture. Guard against injury by cold winds and draughts. At Lockinge our practice is to plant Cucumbers in a ridge of soil formed at the head of the frame; this considerably lessens the difficulty experienced when watering compared with that of forming a mound in the centre of the frame.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Calceolarias.—Plants that were transplanted into cold frames or placed in improvised shelters a few weeks ago, and have been exposed on all favourable occasions, may safely be planted by the end of the present month. They require a deep, rich loamy soil, and should be allowed a distance of about 12 inches apart. C. amplexicaulis is well adapted for planting in large beds and for forming the back rows of borders, &c.; it also makes a good groundwork for tall Ricinus. A mulching of manure from an old Mushroom-bed will help to conserve moisture in the soil and encourage root-action.

Garden Vases, &c.—Plants such as Agapanthus umbellatus, Yucca recurva, Phormium tenax, and others of a hardy nature, may now be planted; but defer placing more tender subjects, such as Agaves, large Sempervivums, Aloes, &c., till later. The most suitable edging-plants for these garden ornaments are those of a drooping character, such as Lysimachia nummularia, Ivy-leaved Pelargoniums, Fuchsias, Convolvulus mauritanicus, Lobelia, Glechoma hederacea var., &c. Tall-growing Pelargoniums such as the Ivy-leaved Mme. Crousse are suitable for pillars, &c. Encourage the development of strong growth, and tie the shoots frequently as they are liable to broken easily. Towards the end of month place these plants against a wall or under a tree in order to harden them off, but see that they are suitably protected against cutting winds.

Work in the Garden.—Ply the Dutch-hoe on all favourable occasions. It will not only prevent weeds from growing, but when properly used will form a layer of fine, loose soil on the surface of the ground that retards the evaporation of moisture from the soil. Now that the period of danger from frost has nearly passed, box-edgings may be trimmed. Golden Willows may also be cut back. Remove old shoots of Rubus biflorus, and manure the plants to encourage strong growths. Clematis require tying often to prevent tangled growths.

Eryngiums, Verbascums, &c., raised on hotbeds can now be planted in nursery beds to grow on for next year. Prick off Astilbe Davidi, Campanulas, &c., when large enough to handle.

Wild Garden.—Remove the coverings from Gunneras, and afford the plants a good dressing of rich manure.

Shrubs.—The following are some of the best shrubs that are in flower at the present time:—Amelanchier canadensis, Amygdalus communis amara, A. persica, fl. pl., Cytisus scoparius præcox, Cerasus pseudo-Cerasus and C. J. H. Veitch, Pyrus baccata floribunda, P. prunifolia, P. spectabilis, and Rubus deliciosus. Standards of the above show to great advantage. The following dwarf shrubs and herbaceous plants are useful for covering steep and dry places:—Artemisia Stelleriana, Anthemis tinctoria, Evening Primrose, Pyrethrum Tchitchatchewi and Veronica Traversii.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Cucumbers.—During the next month these fruits will be more easily produced in frames. The plants have not made good progress recently, mainly owing to the prevalence of cold nights and little sun-heat during the day, but with the present favourable change in the weather the plants may be expected to improve rapidly. Early-grown plants that have been overcropped are liable to be attacked by red-spider. If it is necessary to retain the early-grown plants, thin the old growths out freely, and crop lightly for a period, and at the same time encourage them to make free growth by frequent applications of a light top-dressing of a sweet but not too rich compost composed of good fibrous loam, leaf-mould, and a few horse-droppings. Give occasional applications of clear liquid-manure and soot-water, and light sprinklings of Thompson's manure. If the foliage flags shade the plants from bright sunshine. Ventilate the house freely during the early part of the day, closing the structure early in the afternoon, securing plenty of atmospheric moisture.

Cucumbers in Frames.—If plenty of stable-manure and good pits or frames are available, a plentiful supply of Cucumbers can easily be obtained. Frames in which early crops of Potatos and other vegetables have been grown should be cleaned and planted as required. Pay careful attention to the watering of the plants, guarding against excessive moisture. Admit air freely, and at closing time on bright afternoons thoroughly syringe the plants with clear water. Thin the growths freely to avoid overcrowding, and pinch out the points of the fruiting shoots at the first joint beyond the fruit. Cover up the pits at night time, and see that the manure forms a preper lining to the frame. Cucumbers for exhibition purposes are best produced from young plants, which grow much faster and develop the more handsome fruits than older ones. Shade the plants lightly during the middle of the day, and encourage the fruits to grow straight by placing them in glasses, that can be obtained for the purpose.

Young Vines.—Home-grown pot Vines intended for fruiting next year will now be growing fast, and should be given applications of weak liquid-manure and sprinklings of a suitable Vine-manure. Keep the laterals closely pinched, and stop the canes at about three buds beyond the required length of the rods. Pay careful attention to ventilation, also to damping and syringing the Vines. Gradually withdraw the fermenting material from around the pots or the roots will grow through the drainage holes, allowing the plants to continue actively growing when they should be showing signs of ripening. Recently-planted Vines should be mulched, well syringed and watered when necessary. Stop the leading shoot when it is about 6 feet in length, or at a few buds beyond which it is intended to prune next winter. All other laterals should be allowed to grow as freely as space will permit in order to encourage as much root action as possible.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Fruit Trees.—Plum and Pear trees should be examined with a view of stopping the young shoots. The top portion of the trees should be operated on first, as this will afford time for the generally weaker lower branches to increase in strength. Suppressing excessive growth by pinching at this season is a great aid to fruit-production. After selecting the number of growths required for furnishing the wall or for the extension of the tree, and when eight or more perfect leaves have been formed, all growths should be pinched back with the finger and thumb to five leaves, except in the case of very strong and vigorous shoots, which may be left somewhat longer. If very strong growths are pinched too closely the oldest buds on the shoot will start into growth again, forming a lot of thin, useless shoots. In cases where a strong-growing shoot is proceeding from a part of the tree where an older shoot is barren, the former should be encouraged to grow to take the place of the latter. In this way the tree may be rejuvenated.

Thinning the Fruit.—Before performing this operation due consideration should be given to the amount of fruit the tree is capable of carrying. Some consideration must also be given to the variety, those whose individual fruits are of large size cannot be expected to develop as numerous a crop as a tree whose individual fruits are smaller. Small and imperfect fruits should be removed first, finally going over the trees and leaving as many fruits as the tree can suitably develop in a state of perfection. Heavy cropping means unfruitfulness to follow, whereas light and moderate crops enable the tree to maintain itself in a fruit-bearing condition.

Caterpillars are still continuing their ravages on trees that have not been sprayed as previously advised. Directly the trees pass out of the flowering stage they should be sprayed with a solution of Paris-green (poison). I find Paris-green paste, used in the proportion of 2 ounces to 40 gallons of water, a perfectly safe insecticide for all trees growing in the open-air; but wall trees whose leaf-tissues are somewhat more delicate require an additional 10 gallons of water. I recommend Paris-green paste as it readily mixes with water and is not held in suspension, as the powder is, even when lime or flour has been added.

THE APIARY.

By Chloris.

Queen Raising.—Those who have purchased queens know how expensive this method of re-queening is. Further, it is a practice which often brings keen disappointment to the purchaser. Many an excellent queen, after a journey through the post, has died a few days after taking up her abode in her new home. This being the case, it will be well for the bee-keeper to breed them himself. Sometimes when a colony swarms late in the season, the bees in their haste choose larvæ instead of eggs to raise the future "mother bees," and these never mature as they ought to do. It is found that the best queens are produced during the early swarming season, or when the queen has become old or almost useless, and the bees have decided to cast her aside.

How to Proceed.—To perform the task successfully two stocks are needed. It ought not to be necessary to add that those stocks that are selected for this purpose should be the best in the apiary. But what are the best stocks? The queens in both cases should be two summers old, because such queens will then be in their prime, and the workers from such queens ought to be noted for their energy and hardihood. Having decided on the stocks to be utilised, feed them generously with syrup, and strong colonies will result, approximating swarming condition, which I have said tend to produce the most perfect queens. In one hive place foundation with worker-cell base in the centre of the brood-chamber. The workers will soon draw this out, and the queen will deposit eggs in the cells. As soon as there is a large number of eggs laid, remove the queen, and cut off the comb to the cells containing eggs, and enlarge these cells with a piece of conical wood. These the bees will generally convert into queen cells. Our next care is the other colony. Take out the centre combs and replace with foundation of drone base, and feed as plentifully as possible, which will induce the workers to build drone comb, and the queen to lay drone eggs. By utilising two hives in-and-in breeding is in a large measure prevented. In this manner a dozen or more queen-cells will be started, and in about eight to ten days the next operation will be necessary.

Nuclei.—A nucleus is really a colony on a small scale. Take two combs of honey and pollen and the adhering bees, and one comb of brood, placing the combs with honey on each side of that containing the brood, and take care that no queen is added. In the centre of the comb containing brood, cut a hole about 2 inches in diameter, and in it secure a queen cell taken from the hive which has been set aside to produce queens. It will be well to add a few more bees by brushing some from other combs. Proceed in this manner with each nucleus; remember to leave one queen cell for the stock which has produced them. In performing this work great care must be taken, first in handling the cells, for the least shake or squeeze will cause permanent injury to its inmate and render the queen useless, and secondly, by securely fastening in the queen cells by the aid of pins when grafting them on the new combs. All that remains to be done is to make the nuclei warm, keep them well apart, never nearer than 6 feet, make the entrances small to prevent robbing, turn them in different directions to enable the queens easily to find them when they return from their wedding trip, and finally to replace frames containing full sheets of foundation in the hives from which we took combs. In four or five days the queens will hatch, and in five or six days more will be fertilised by the drones from the selected hives. Before concluding, one word of warning is very necessary. Should the nuclei have no young brood when the queens leave to meet the drones, the workers will desert the hives with her, so take great care to insert a comb of brood a day or two after the queens have hatched.

APPOINTMENTS.

MONDAY,	MAY 29	Annual Dinner of Kew Guild, at Holborn Restaurant, at 7.30 P.M.
TUESDAY,	MAY 30	Royal Horticultural Society's Show in the Temple Gardens, Thames Embankment, London (3 days). Bath and Western and Southern Counties Society's Show at Nottingham (5 days).
THURSDAY,	JUNE 1	British Gardeners' Association, Meeting in Memorial Hall, Farringdon Street, E.C., at 8 P.M. Linnean Society, meet.
FRIDAY,	JUNE 2	Royal Botanic Society, Lecture.
SATURDAY,	JUNE 3	Société Française d'Horticulture de Londres, meet.
WEDNESDAY,	JUNE 7	Royal Botanic Society's Grand Horticultural Exhibition, Regent's Park (3 days). Royal Cornwall Show at Newquay (2 days).
FRIDAY,	JUNE 9	Royal Botanic Society, Lecture, 4 P.M.
MONDAY,	JUNE 12	Bank Holiday.
THURSDAY,	JUNE 15	Linnean Society Meet.
FRIDAY,	JUNE 16	Royal Botanic Society, Lecture. Gardeners' Royal Benevolent Institution, Annual Festival Dinner at Hôtel Metropole.
TUESDAY,	JUNE 20	Royal Horticultural Society's Committees meet. National Rose Society's Committee meet.
WEDNESDAY,	JUNE 21	Yorkshire Gala, York (3 days).
FRIDAY,	JUNE 23	Royal Botanic Society, Lecture, and Meeting at 4 P.M.
MONDAY,	JUNE 26	Isle of Wight Rose Society's Exhibition at Ventnor.
WEDNESDAY,	JUNE 28	Richmond Flower Show. Southampton Flower Show (2 days).
THURSDAY,	JUNE 29	Colchester Rose Show.
FRIDAY,	JUNE 30	Royal Botanic Society, Lecture.

SALES FOR THE WEEK.

MONDAY NEXT—
Special Sale of rare Orchids in flower at 12 30.
TUESDAY NEXT—
Great Unreserved Sale of 100 magnificent Orchids, by order of Messrs. Sander & Sons, at 3.
WEDNESDAY NEXT—
Palms, Plants, Lilies, Begonias, Ferns, &c., at 12.
THURSDAY NEXT—
Special Sale of rare Established Orchids at 3 o'clock. Also Orchids in variety at 12.30.
At 67 and 68, Cheapside, E.C., by Protheroe & Morris.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —58·3.

ACTUAL TEMPERATURES :—

LONDON.—*Wednesday, May* 24 (6 P.M.): Max. 64°; Min. 43°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, May* 25 (10 A.M.): Bar., 30: Temp., 62°. *Weather*—Bright sunshine with occasional clouds.

PROVINCES.—*Wednesday, May* 24 (6 P.M.): Max. 59°; Min. 42°.

The Paris Show.

FRENCH horticulture has been worthily represented during the present week in the Cours-la-Reine, Paris, in the form of an International Exhibition held by the Société Nationale d'Horticulture de France. The event aroused considerable interest on this side of the Channel, for although few English exhibits were forthcoming, the show was attended by a large number of English visitors; and the Royal Horticultural Society was represented by a specially-appointed deputation, consisting of Sir ALBERT ROLLITT, M.P., Captain G. L. HOLFORD, Messrs. J. GURNEY FOWLER, HARRY J. VEITCH, and Rev. W. WILKS. Sir TREVOR LAWRENCE and Lord ILCHESTER had also intended going, but were unable to do so.

How excellent the exhibition was from the English point of view is shown by the large number of medals awarded by the deputation; and we feel sure that the appreciation thus indicated was shared fully by every visitor from this country. Many of us could not help contrasting the delightful scenic effects, the perfect blendings of colours, the numerous and spacious promenades for the convenience of visitors, and the evidence throughout of artistic skill, with the opposite conditions that generally obtain in our own exhibitions.

After passing under an entrance portico of the Louis XVI. style and through the outside grounds planted with selected specimens of trees and shrubs, it was seen that the Orchids were arranged on stages in a perfectly circular apartment, and as the path led through the centre of this the Orchids described two half-circular groups with beds of choice Caladiums on the floor in front of them, the walls behind the Orchids being prettily draped in a neutral tint to give effect.

Emerging from this into a much larger building a perfect floral picture came into view, in which the plants were arranged on slopes, mounds, and undulations of various degrees, rather than on dead levels or monotonous stages. Every group of plants, whether in flower or not, was disposed in a position where it could be seen to the best advantage; thus most of them were below the eye-level, many being on the surface of the ground as a flower-bed. Moreover, the pots, though so necessary in the cultivation of plants, are not of value in an exhibition, they were therefore hidden from view wherever possible, not by the crowding of plants together for the purpose, but by the plunging of the pots in the soil.

It would appear that the committee charged with the arrangement of such a show must possess a complete knowledge of what will be forthcoming some considerable time beforehand, in order that every plant, *petite et grande*, can be provided with the position that is necessary to make it appear as a portion of a deliberately designed scheme.

In positions where the view could be improved by something for the eye to rest upon, immense specimens of Rhododendrons in flower were elevated in tubs many feet in height; and this provision suggested to our mind once again the necessity there exists for a circular stage or something of the kind in the centre of the new Hall in Vincent Square, which could be decorated with large Palms or other ornamental foliage plants, and occasionally with flowering plants.

Passing towards the other end of the Exhibition, the visitor found that the comprehensive exhibits of Rhododendrons were also grouped as in a garden, insomuch that he could have imagined himself to be in the Rhododendron Dell at Kew. Messrs. VILMORIN'S annuals were arranged in an equally effective manner. Another compartment was planted as a Rose-garden, having dwarf plants in the centre beds and standards around the sides, which were prettily draped with cream-coloured tissue. If we compare the Exhibition with our Temple Shows, it must be said that it greatly lacked the splendid collections of Orchids that we have; also that the Begonias, Cannas, Caladiums, Gloxinias, Roses, &c., were not superior, but in some instances were inferior to our own. Annuals were shown better than they have ever been seen in England, and zonal Pelargoniums were unsurpassable. Such a collection of Vegetables as was staged by Messrs. VILMORIN ANDRIEUX ET CIE. has never been seen here in the month of May. We may add that there was a very interesting exhibition of paintings of fruits and flowers, also a few exhibits of scientific interest.

The three special prizes offered by the PRESIDENT of the Republic were awarded to M. MOSER, Versailles, MM. VILMORIN, ANDRIEUX ET CIE, and MM. CROUX ET FILS.

The PRESIDENT of the Republic was received at the entrance to the Exhibition at 10 30 A.M., May 20, by M. VIGER, the Society's President, the premier Vice-President, M. ALBERT TRUFFAUT, the Secretary, M. CHATENAY, and others. In opening the Exhibition President LOUBET paid a high tribute to the organisers of the show, particularly to M. VACHEROT.

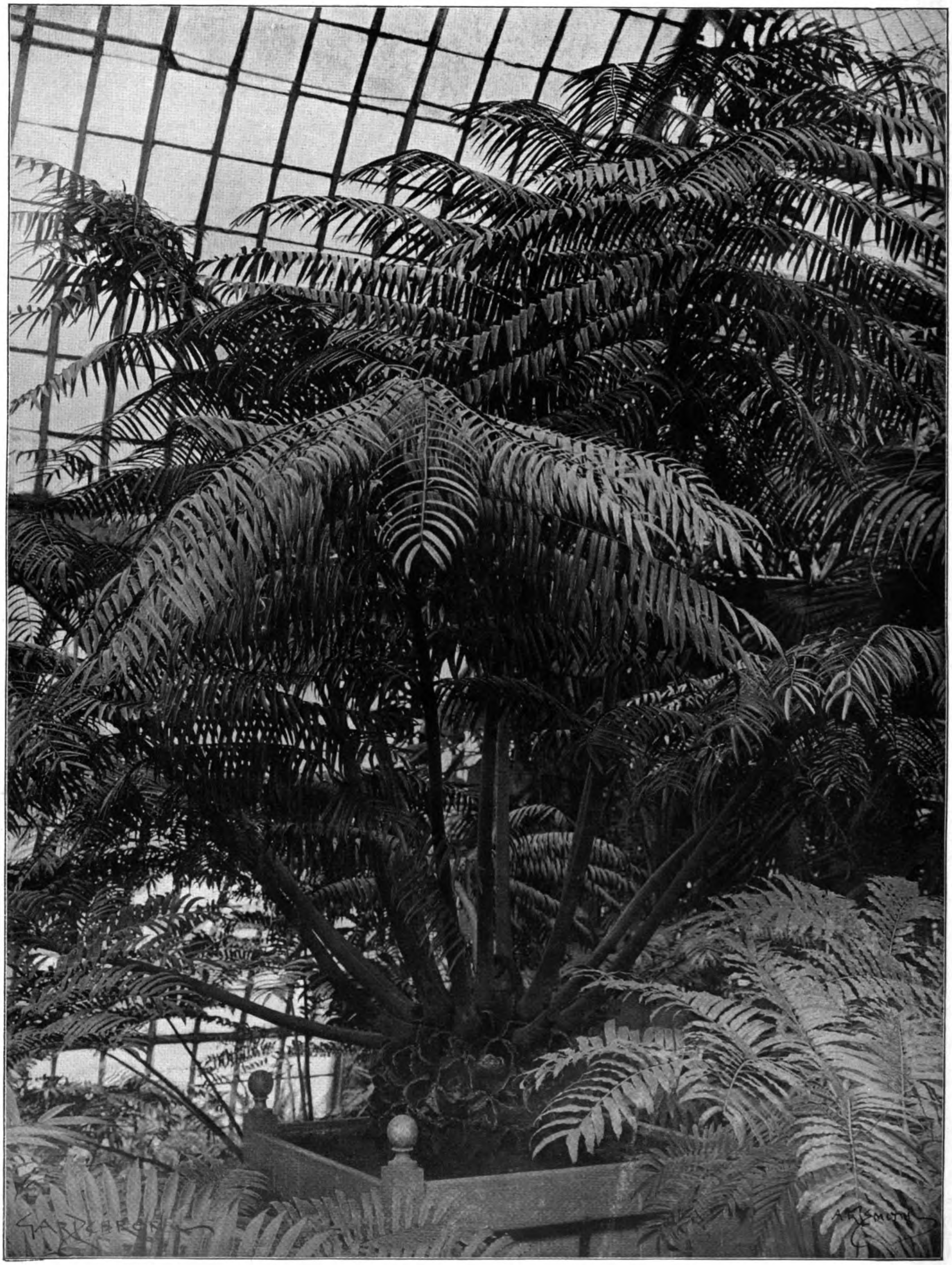
Among those who received honours from President LOUBET, in addition to M. VACHEROT and M. CHATENAY, we were glad to see the name of our esteemed correspondent, M. GEORGES TRUFFAUT, who is doing so much good work for scientific horticulture in France. At midday the members of the jury and of the deputation, with others, were entertained at luncheon, and speeches were made by M. VIGER, President of the Society and a former Minister of Agriculture; by M. RUAN, the present Minister of Agriculture; and M. DUJARDIN-BEAUMETZ, Assistant-Secretary for the Fine Arts. On Sunday there was a banquet at the Society's headquarters in the Rue de Grenelle, at which function Sir ALBERT ROLLITT was spokesman for the English deputation.

In addition to other social gatherings and receptions on subsequent days, a Congress was arranged at which M. LEON DUVAL was to read a paper on Orchids and Hot-House Plants; M. PHILIPPE DE VILMORIN, a paper on Hardy Flowering Plants, and M. TILLIER a paper on Ornamental Trees and Shrubs.

⁂ We have the satisfaction to announce that the Jury of the Paris Exhibition awarded a large Gold Medal to the *Gardeners' Chronicle* for its illustrations, of which a selection was shown. Other exhibits of a like character were made, to which awards of less value were given.

The Awards at the Royal Horticultural Society.

THE practice which is sometimes followed of giving an award to an old and well-tried variety, hitherto, by some accident, overlooked by the Society, has given rise to adverse criticism and occasionally provokes a sense of the ludicrous. It is absurd, say some, to make an award, we will say by way of illustration, to Cox's Orange Pippin, to Black Hamburgh Grape, or to any other variety whose merits are now generally recognised, although it may not have been stamped with the hall-mark of the Society. Perhaps it is. But would it not be equally absurd that such varieties should never receive recognition from the Society, and never be included in its honour-lists? Quite lately, two excellent Potatos, which have long been in commerce, were awarded First-class Certificates. Both had previously, when grown at Chiswick, received Awards of Merit, and having now, after several years' experience, proved to be first-class standard varieties, the Award of Merit has been found to be inadequate, but in these cases fittingly the stepping-stone to a higher award. But to many persons



Angiopteris Teysmanniana growing in the State Botanic Gardens, Brussels.

wedded to traditional methods, and who think awards of the nature referred to should be made to new things only, the granting of First-class Certificates to comparatively old forms is a stumbling-block. In their estimation it is better to grant awards whilst the subjects of them are new and scarce, even if a great mistake eventually results, than it is to wait patiently for a few years until experience has shown whether the subject be worthy of an award or not.

The whole matter hinges on the purpose for which subjects are placed before the Fruit or any other Committee. If staged in the hope of getting a certificate that shall enhance the trade value of the subject, it is evident that a belated award, after several years' experience of its cultural value, can be of no service in that respect. If the sole object in staging new or assumed new things or varieties be to give the subject publicity, and to secure an award on the merits of the exhibit, without reference to any financial result, then nothing but good can follow if the granting of an award be deferred until time has shown whether it is merited or not.

Exhibits that come before the Fruit Committee often come into a different category from those presented to the Floral Committee. Such a remarkable plant as Meconopsis integrifolia tells its own story at once. Its claims to immediate and first-class honours were incontestable. With fruits and vegetables the case is different. What may be described as remarkable products never crop up with them. They come in the form of improved varieties, or what are assumed to be so, but beyond the sender no one has any proof that they are such. It is not possible for the Committee to determine whether they are so or not until time and experience have determined the question. When it is remembered how numerous are the varieties of fruit, for instance, that are put into commerce with Royal Horticultural Society awards, but which fail to secure any permanent position in gardens, is it not certain that the practice of granting certificates on the first appearance of a subject is a mistake.

A simple way of getting over the difficulty would, if it were only practicable, be to make Awards of Merit to all subjects provisionally, these awards being granted and regarded solely as evidences of *primâ facie* or apparent value or special usefulness, but subject to advancement to a First class Certificate if, as happily sometimes happens, the subject proves to be distinctly meritorious. So far as the Fruit and Vegetable Committee is concerned it is now happily possible to test so many things under favourable conditions in one or several years at Wisley, that the proposals now made would create no hardship, and would prevent mistakes generally.

A study of the honours bestowed during the past thirty years is rather unsatisfactory, because the lists contain so many records of awards which time has shown to have been given without due warrant.

It is, to our thinking, most desirable that Awards of Merit of any kind or degree should continue to be made by the Royal Horticultural Society and its Committees on other than commercial considerations, though we are afraid that in the case of individuals these influences must continue to exert their power till the Millennium comes. Of course we by no means wish to convey the notion that financial considerations should not have their due weight with exhibitors. What we desire to see is that neither the Committees nor the Council should be unduly influenced by them. What they have to do is to examine what is brought before them, and to record their impressions as to their abstract merits irrespectively of their possible value as commercial products. If a Welwitschia or a Rafflesia were brought before the Committee neither would have any financial importance, but the interest attaching to them from the point of view of the Society would be a thousandfold greater than that of a "new" Apple or of an Odontoglossum with four spots instead of three.

Take the case of the Meconopsis before alluded to. It received a First-class Certificate, but that, in our opinion, was decidedly inappropriate, and offered an unintentional insult to the plant by lowering it to the category of the commonplace. Fortunately it also received the far more appropriate award of a Botanical Certificate. But some will say that money value must be the ultimate test. Very well; let it be so. Let us have in that case a commercial committee to deal exclusively with that aspect of the case. This may sound Quixotic, but the higher the ideal the Society strives after the more will it gain in the respect of the public, the better it will be for the traders in the long run, and the greater good will it do to horticulture pure and simple.

We are told that some propositions are under the consideration of the Fruit Committee dealing with the matter of awards. Till they have been thoroughly considered and adopted by the Committee it would be premature to make further comments on them. It is nevertheless a good sign to see the Committees taking steps to remove existing improprieties and anomalies, and, as we hope, to reduce the extravagant and premature award of Certificates.

The very extraordinary Primula shown at the last meeting was, it is true, not in condition as an exhibition plant, and will doubtless receive a certificate when more fully developed. In the meantime, the Scientific Committee has saved the credit of the Society by awarding it a Botanical Certificate, otherwise the most remarkable plant shown on that occasion would have been entirely passed over.

ANGIOPTERIS EVECTA, HOFFMAN, VAR. TEYSMANNIANA, DE VRIESE (see Supplementary Illustration).—According to British scientists, Angiopteris evecta is the only well-characterised species of the genus. It is a gigantic Fern, and requires to be grown in a temperate-house. The other so-called species, generally considered on the Continent as distinct, are only varieties of the species. Professor De Vriese, the eminent Dutch botanist, in his *Monograph of Marattiaceæ*, published at Leyden in 1853, described sixty species, all native to Polynesia and Continental Asia so far as the Himalayas and Madagascar. Leaving on one side the various opinions of different authors, and taking into consideration the great similitude between A. evecta and A. Teysmanniana, it seems preferable to accept the opinions of British authors as admitted in the Kew *Hand-List of Ferns and Fern Allies*. This Angiopteris is there treated as the variety, Teysmanniana, De Vriese, of Angiopteris evecta, Hoffmann. This variety is a native of Java. It is characterised by the base of the rachis of the leaf, which is provided with coloured hairs. The inferior pinnules are nearly as long as the median ones, but the upper lobes are much smaller. There exists in Madagascar a very closely allied form, which might be considered as a transition between the varietal form A. Teysmanniana and the typical A. evecta. Our illustration shows a magnificent, indeed probably the finest specimen known of Angiopteris evecta var. Teysmanniana. This plant has been cultivated for over twenty-five years in the winter-garden or fernery of the State Botanic Garden at Brussels. It is planted in a square tub of 1 m. 25 cm. (about 49 inches) in diameter. There are eighteen leaves, some of them nearly 4 m. (6 to 7 feet) long. The whole plant is 7 m. (8 to 9 yards) in diameter. There is no appearance of true stem, but the base of the stock is 78 cm. (30 to 31 inches) thick. During the summer the tub is filled two or three times with cow-manure, the Angiopteris being an extraordinarily voracious plant. *Louis Gentil, Brussels.* [The photograph was taken by M. F. Lambert, and forms one of a series devoted to the rarities of the Brussels Botanic Garden, for which we are indebted to M. Massart. In the recently published *Index Filicum* of Carl Christensen, De Vriese's species are considered as certainly not distinct, though they are all enumerated. Ed.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—In connection with the sixty-sixth anniversary festival dinner in aid of the funds of this Institution, which will take place on June 16 at the Whitehall Rooms, Hôtel Métropole, the Duke of Westminster, who will preside on the occasion, has issued an appeal for support, in which it is stated that in order to meet the liabilities incurred annually there is an assured income of £900 only, leaving nearly £4,000 to be raised each year to carry on the work. There are also at the present time thirty-two applicants on the list awaiting election, several of whom are afflicted with blindness. Further help is therefore much needed. Contributions will be gratefully acknowledged if sent to the Duke of Westminster, care of the Secretary, 175, Victoria Street, S.W.

SURVEYORS' INSTITUTION. — The annual general meeting to receive the report of the Council and the announcement of the result of the election of officers for the ensuing year, will be held in the Lecture Hall on Monday next, May 29, at 3 o'clock. The prizes awarded to successful candidates in connection with the recent preliminary and professional examinations will be presented by the President at the annual general meeting. The Council have accepted an invitation from the Devon and Cornwall provincial committee of the institution to hold the next country meeting at Exeter on May 25 and 26.

WOMEN'S AGRICULTURAL AND HORTICULTURAL INTERNATIONAL UNION. — The annual meeting of the above Society will be held, by kind invitation of Mrs. Bryant Sowerby, at the Museum, Royal Botanic Gardens, Regent's Park, London, N.W., at 11.30 A.M., on Wednesday, May 31, 1905. Mrs. Wilton Allhusen in the chair.

PRESENTATION TO MR. C. SIMPSON.—The gardeners and friends residing in Ripon and district met on the 19th inst. to present to Mr. C. Simpson a testimonial on the occasion of his leaving Newby Hall Gardens. It took the form of a gold watch, also a gold brooch for Mrs. Simpson. Mr. Simpson takes with him from Newby the best wishes of a large number of friends, by whom he is held in very high esteem.

DR. AUGUSTINE HENRY will preside at the annual dinner of the Kew Guild, to be held at the Holborn Restaurant on Monday evening next. During the twenty years that Dr. HENRY was in China he rendered many valuable services to Kew, for which Kew men will ever be very grateful.

THE WEATHER has been extremely cold in England during the past week, and visitors to the Paris show experienced equally bitter winds on the other side of the Channel. Mr. W. H. DIVERS writes from Belvoir Gardens, Grantham, as follows :—

"We had a severe frost here on Monday night, May 22. The thermometer on the grass went down to 19° Fahr., and another fully exposed outside the Stevenson screen—4 feet above the surface of ground—it went down to 25°. Many of the Apple-trees were in full blossom, and have suffered considerably. Some of the earliest to flower were set and are safe. Pears also have set well; these and the bush fruits were well protected by their foliage. Strawberries have suffered very much, but have more flowers to expand yet. The Japanese Wineberry (Rubus phœnicolasius) is very much cut, but Raspberries and Loganberries by its side are scarcely touched. Even the flower-stems of the British weed, Plantago lanceolata, showed signs of severe injury."

Mr. F. C. CLARK, Wiston Hall Gardens, Leicester, writes :—

"We have experienced terrible weather in this district during May. Bitter cold winds have prevailed, and on the morning of the 23rd we registered 12° of frost, and 8° on the 22nd. Great damage has been done to growing vegetable crops, bedding plants, and Chrysanthemums, as well as to Strawberries, Apples, &c."

Mr. W. MILLER, Berkswell, Coventry, writing on May 22, states :—

"We have ice upon our waters this morning, and frost sufficient to blacken both Potatos and Kidney Beans. Plums and Pears have suffered by the continuous dry, cold, north-easterly winds. Whole clusters of Pear-blossom will fall off by the merest touch of the hand. This is the case all over the tree, and also of many trees. Very few fruits seem to be set. Plums are perhaps not so bad, but they too have had a terrible thinning. All this seems a pity after such a healthy and liberal show of flowers of these two fruits. Apples being later may perhaps fare better, but of them it is yet too soon to form an opinion. All crops on farms and in gardens want rain and warmer weather very badly. BURNS must have been inspired by better weather than we are having just now when he wrote those happy lines—

'Again rejoicing nature sees
Her robe assume its vernal hues,
Her leafy locks wave in the breeze,
All freshly steeped in morning dews.'"

An even worse state of things is described by Mr. W. H. CLARKE, Aston Rowant House Gardens, Oxfordshire :—

"Following a cold icy north-east wind which blew all day on the 21st and 22nd, a sharp frost, registering 8° and 10° respectively in the open, did considerable damage to fruit-trees during these nights. Late in the evening there seemed every appearance of the rain, so much needed by the agriculturists on the higher parts of these Chiltern Hills. During the late hours of the night or early morning the weather changed, and everything was covered by hoar frost at 6 A.M. Over-anxious amateurs have their early Potatos and Beans blackened. Early Strawberry-flowers are blackened, and Pears of the size of horse beans on pyramid trees are frozen black. Plums and Cherries are past flowering, but I am afraid the crop has not escaped injury; even the young fruits of the Damson appear to be in a very precarious state; wall trees, I am pleased to say, have escaped injury. In the pleasure grounds the young growths of Paulownia imperialis are quite blackened; so also are the large leaves of Magnolia Watsoni and M. acuminata, while the flowers and foliage of M. Soulangeana nigra escaped unhurt. Robinia hispida and Dimorphanthus mandschuricus suffered somewhat, but the sun's rays not falling directly on the foliage, allowed them to thaw gradually, consequently they will not suffer much. Buddleia globosa and Pavia macrostachya, although frozen, thawed gradually, and are unhurt. The frost on the night of the 22nd was still more disastrous, and those crops which had escaped the previous night were destroyed, even where some protection had been given. Trees which escaped the first night, such as the young leaves of Quercus coccinea, Ginkgo biloba, Tilia mississippiensis, Sophora pendula, Wistaria sinensis and W. multijuga are all cut and in some cases the leaves blackened. Many herbaceous plants and Ferns growing in a sheltered hardy fernery are likewise severely damaged.

LINNEAN SOCIETY.—The anniversary meeting of this Society, held on Wednesday under the presidency of Professor HERDMAN, was remarkable on more than one account. It was the first anniversary meeting at which lady Fellows were present as of right, and several availed themselves of their privileges. Next, to the great regret of the Fellows, Mr. CRISP laid down the office of Treasurer, which he has held with so much benefit to the Society for about a quarter of a century. Mr. CRISP leaves the finances of the Society in a very satisfactory condition, and the Fellows will remember with gratitude not only his skilful performance of his duties, his geniality and tact, but also his repeated acts of liberality. The expenses connected with the obtention of the new charter, by which it became possible to admit ladies as Fellows, were borne by him, and it was mentioned that he has commissioned a commemorative picture to be painted in honour of the event. The President's address dealt, among other things, with LINNÆUS's experiments on the production of pearls by artificial methods, and of Professor HERDMAN's own researches in this direction. In the course of the proceedings the Linnean Medal was delivered to Sir DIETRICH BRANDIS, to be by him transmitted to his fellow-townsman, Professor STRASSBURGER. It is difficult to conceive a more fitting recipient of this honour than the celebrated Professor of Bonn.

BRITISH GARDENERS' ASSOCIATION. — The meeting organised by this Association for Tuesday, June 1, in the Memorial Hall, Farringdon Street, E.C, will be open to the general public, and will thus afford an opportunity to gardeners present in town for the Temple Show of attending and learning something of the progress and aims of the Society.

MESSRS. BACKHOUSE'S NURSERY, YORK.—The *Yorkshire Herald* has an appreciative article upon this well-known establishment, the history and development of which are traced. There are two rather singular omissions—there is, so far as we see, no reference to the journeyings in Australia, actuated by philanthropic motives, of one of the firm. In the course of his wanderings Mr. Backhouse made extensive collections of plants, some of which, if we mistake not, were introduced into cultivation by him. The other omission consists in the fact that no mention is made of the collection of Orchids for which the firm has an enviable reputation.

"INDEX FILICUM."—A list of Ferns, completed to the present time, is a great desideratum. MOORE's *Index Filicum* was never completed, and is, of course, out of date. We have before us the first part of an enumeration of all the genera and species of Ferns published between 1753 and 1905, with the principal synonyms, indications of geographical distribution, &c. Under the heading "Angiopteris of Hoffmann" we find sixty or seventy species enumerated, mostly by DE VRIESE. The author of the present *Index* considers them as "certainly not distinct," but, in the absence of a recent monograph, he adopts DE VRIESE's names, adding that BAKER considers all these to be referable to one species, A. evecta. The author hopes that his book will do for Ferns what the *Indes Kewensis* has done for flowering plants. He also proposes to include the names of garden Ferns which have appeared during the last thirty years. Dr. CHRIST, of Bâle, has lent his valuable co-operation. The systematic part of the volume will be based on ENGLER & PRANTL's *Die Naturlichen Familien*, on HOOKER & BAKER's *Synopsis Filicum*, and on Dr. CHRIST's *Die Farnkraute der Erde*. Great attention has been paid to the most detailed and exact citation of the literature and dates of publication. The book may be procured through WILLIAMS & NORGATE, or any foreign bookseller, or direct from H. HAGERUPS, Boghandel, Copenhagen. It will be completed in eleven or twelve parts at the subscription price of 3s. 6*d*. per part.

SUMMER BEDDING.

BY this term is not meant the geometrical carpet bedding of thirty or forty years since, but the planting-out of tender and half-hardy plants which can only stand our climate out-of-doors in the summer. The arrangement of colour and form, however, is as important as in former days, if not more so, consequently a few general hints may be useful. The arrangement most in vogue is to fill the beds with one or two species of plants, contrasting or harmonising as may be desired, and to cover the ground below with a carpet of some dwarf plant or a trailing variety pegged down. Now, almost any two colours can be combined provided the shade of each colour is the same, or at least harmonises, or one colour may be used in two or three shades, but contrasting colours in different shades always have a hard if not unpleasant effect.

For instance, a bright yellow Calceolaria looks well with a dark heliotrope, such as "Lord Roberts," while the soft yellow one is much better when combined with the almost French grey lavender of "Miss Nightingale." In the same way "Lord Roberts" combines well with any dark crimson or scarlet Pelargonium, while "Miss Nightingale" harmonizes with the pink Ivy-Pelargonium.

These are merely examples of harmonious shading. The general rule is to harmonize the shades of contrasting colours, and to avoid too violent contrasts between the dot plants and the carpet. A rich dark carpet well and evenly planted throws up the dot plants as a rule better than one of a lighter shade, but a light blue, pink, or even white carpet may be effectively employed when a "cool" effect is required, and in this case the dot plants should also be of a light tint.

In small beds it is generally better to employ only one species of plants for the "dots," but where there is enough space the effect is enhanced by mixing foliage plants with the flowering ones, the result being both richer and softer. Dark-leaved Cannas, Ailanthus, Ricinus, Eucalyptus, hardy Palms, striped Maize, Perilla, and Cineraria maritima are all useful for this purpose, and can be combined or contrasted with their companions as desired. Endeavour to avoid using too many varieties of plants, which leads to patchiness, and aim at a brilliant, bold effect. If there are a series of beds it is generally better to arrange a scheme of colour for the whole rather than for each individual bed. For instance, a scheme in crimson and pink, or in scarlet and orange, or orange and yellow, shading in each case from the darkest in the centre of the scheme to the lightest at the outside, will look far better than if one bed is scarlet, another yellow, and a third pink or blue. One word of warning. Only employ plants whose shades you know; do not trust to florists' descriptions. If you are not certain two plants will harmonise, replace one with a foliage plant. The effect may be tamer than the proposed combination, but it will not be an eyesore. *J. S. Turnor.*

VEGETABLES.

CABBAGE SUTTON'S "APRIL."

FOR many years I had pinned my faith on Ellam's Early as being the best Cabbage for early cutting, but I must now change that opinion in favour of Sutton's April. I saw an especially fine breadth of the latter recently. Sown on August 20, and put out on firm, well-enriched, stiff soil, the plants took to their new quarters quickly, and turned in ready for cutting quite in the first days of April. The heads are not large, but compact and of good colour, and are most tender and succulent, and, what is important, there was not a "rogue" to be found in the batch. I look upon this Cabbage as a distinct advance upon all others for an early crop. *E. Molyneux.*

NEW OR NOTEWORTHY PLANTS.

PRIMULA COCKBURNIANA.*

UNDER this name Messrs. Veitch showed on Tuesday last a Chinese Primula new to gardens, which was properly awarded a Botanical Certificate. So far as the colour of the flowers is concerned, it differs from any other species of the genus known to us. From a tuft of obovate oblong, irregularly toothed, leaves, narrowed at the base and slightly farinose, rises a scape 3 to 4 inches high, but which is said to attain to as much as a foot in height in the wild state. At the top of this scape are borne two to three whorls of flowers as in P. japonica, each whorl composed of three to six blossoms. Mr. Worthington Smith's drawing, taken from the living specimen as exhibited on Tuesday last, will serve to give a general idea of the habit of the plant; but no doubt as the plants become stronger they will increase in stature. The colour of the flowers is a rich orange-scarlet! This colouration is in itself remarkable, and its potentialities in the hands of the hybridiser excite the keenest anticipations. In all the brilliant show of Tulips and other flowers, this little Primrose undoubtedly took rank as the most interesting if not the most conspicuous plant in the whole exhibition. The Meconopsis integrifolia attracted, as well it might, the admiration of all beholders, yet it must be remembered that this delightfully-coloured Poppy made its *débût* some time ago, and was illustrated in our columns in 1904, p. 240, whilst the humbler Primrose made its first appearance only on Tuesday last.

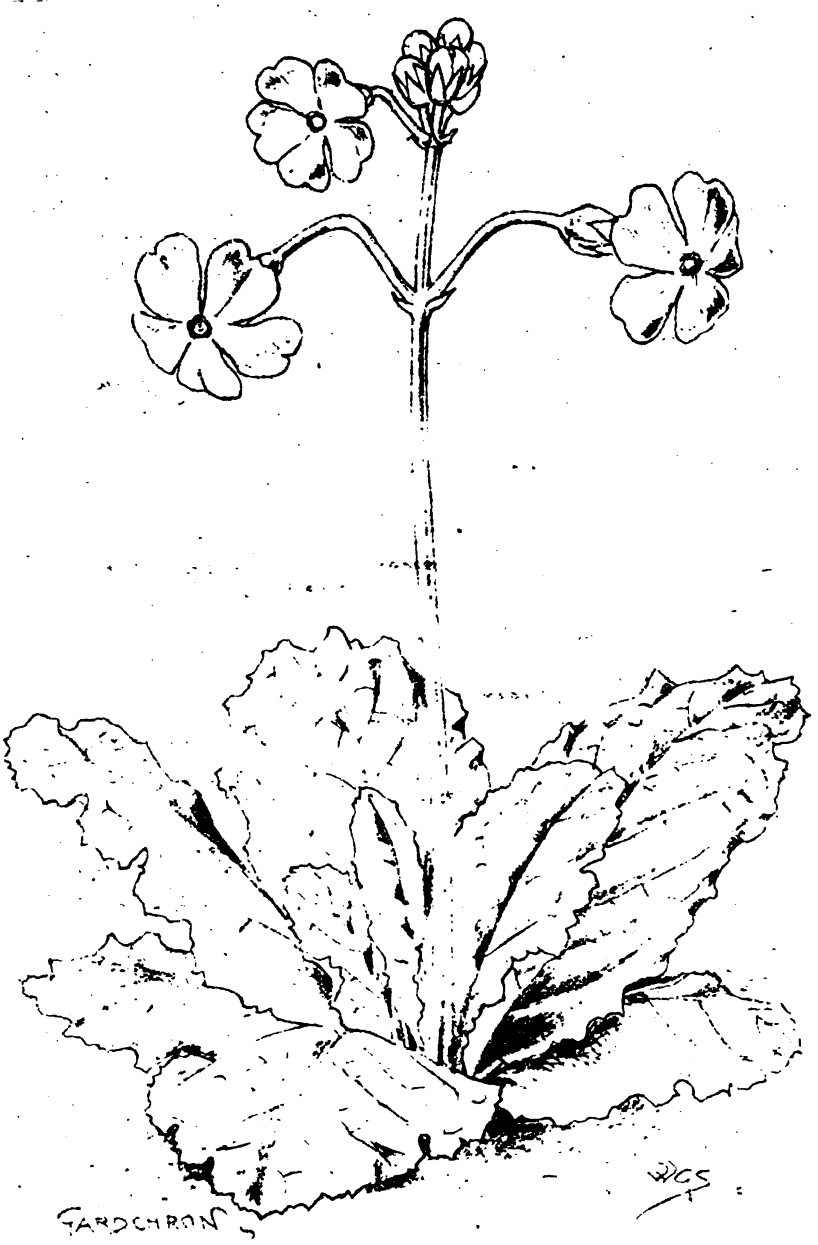


FIG. 137.—PRIMULA COCKBURNIANA, A NEW SPECIES COLLECTED IN CHINA BY MR. E. H. WILSON: FLOWERS OF ORANGE-SCARLET COLOUR.

---

* *Primula Cockburniana*, Hemsley, in *Journ. Linn. Soc*, xxix., 313 (1892).—P. Poissoni similis sed foliis tenuioribus fere obsolete denticulatis; scapo graciliore; floribus minoribus; calycis farinosi dentibus deltoideis; corollæ lobis retusis; bracteis minutis. Herba perennis, glabrescens, scapo gracili 4—12 poll. alto; floribus in verticillios 2—3 superpositos dispositis; verticillis 3—6 floris. Folia tenuia, obovato oblonga, deorsum angustata sed non vere petiolata, apice rotundata, 2—4 poll. longa, primum plus minusve pulverulenta cito glabrescentia, obscure lobulata simul minute denticulata, venis primariis conspicuis. *Flores* circiter 6 lineas longa et 9 lineas lata, pedicellis gracilibus demum fere pollicaribus; calyx anguste campanulatus, circiter 2 lineas longus, dentibus erectis acutis; corollæ glabri tubus cylindratus, lobis obcordatis patentibus venosis. *Capsula* deest. Easily recognised by its slender habit among the species having superposed whorls of flowers. *W. B. H.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

MAY 23.—The display in the Hall of the Royal Horticultural Society on Tuesday last scarcely equalled that of the previous meeting, but a very fine exhibition was nevertheless got together. Tulips were especially prominent, for in addition to the entries in the National Tulip Society's classes, most of the firms who make the culture of these bulbous flowers a speciality staged extensive groups of these showy plants. There were also commendable exhibits of Orchids, extensive collections of herbaceous and alpine flowers, a meritorious display of Gloxinias, brilliant masses of florist's flowers—Pelargoniums, Calceolarias, Roses, Carnations, Clematis, and a host of other things. A beautiful exhibit of forced fruit came from the noted Gunnersbury House gardens, including Nectarines and Plums in pots. Many novelties were presented, comprising several new species of Primulas from China, and varieties of the beautiful Onco-Regelia type of Iris from Holland.

The FRUIT AND VEGETABLE COMMITTEE awarded a Certificate of Merit to a new Cucumber.

The FLORAL COMMITTEE recommended one First-class Certificate and three Awards of Merit; while the ORCHID COMMITTEE gave two First-class Certificates and three Awards of Merit.

The building was well filled with visitors during the afternoon, in fact access to the various exhibits was at times difficult.

A LECTURE was given at 3 P.M. by E. M. HOLMES, Esq., on "Medicinal Plants, Old and New."

A very large number of new Fellows were elected.

Floral Committee.

Present: W. Marshall, Esq. (Chairman), and Messrs. Jas. Hudson, John Green, Geo. Nicholson, J. F. McLeod, R. C. Notcutt, C. Blick, J. Jennings, Wm. Howe, Chas. Dixon, Chas. Jeffries, H. J. Jones, Herbert Cutbush, Chas. E. Shea, Wm. Cuthbertson, E. H. Jenkins, Wm. J. James, Chas. T. Druery.

One of the showiest exhibits in the Hall was a batch of Gloxinias, set up by Messrs. JOHN PEED & SON, West Norwood, London. Both growing plants and cut flowers were included, the former excellently grown and flowering freely. We have only space to name a few, and of these King Edward VII. is of an intense scarlet colour, Countess of Warwick delicate rose-coloured, with a lighter throat, and very free flowering; Countess of Ilchester resembles the last-named, but has a deeper shade of colour. C. Young is a meritorious scarlet variety; Empress of India was one of the largest flowers shown, it is of good purple colour. Messrs. Peed also exhibited a number of alpine plants (Silver-gilt Banksian Medal).

A display of Roses set up by Mr. GEO. MOUNT, Rose Nurseries, Canterbury, was magnificent. Such lovely varieties as Mrs. Edward Mawley, Ulrich Brunner, Capt. Hayward, White Maman Cochet, Frau Karl Druschki, and Mr. John Laing were presented in large numbers in the best possible condition. The collection well merited the Silver-gilt Flora Medal awarded.

Some good Roses were shown by Mr. Kirkwood, gr. to E. WORMALD, Esq., 15, Berkeley Square, W. The varieties were Maman Cochet and white Maman Cochet. Fancy glass vases were requisitioned for their display. Mr. KIRKWOOD is evidently a successful cultivator, being able to stage so extensive a group and in such good quality (Silver Banksian Medal).

Mr. H. B. MAY, Dyson's Lane Nurseries, Upper Edmonton, brought a large collection of Gymnogrammas, with small specimens of other Ferns and Selaginellas interspersed among them for relief. Many of the best species and forms of this handsome genus of Ferns were included some of the most notable being G. pulchella var. Wettenhalliana, G orchracea, G. gracilis (an appropriate name), G. Alstoniæ, whose pinnæ, intensely covered with golden farina on their under surfaces, have their tips reflexed; G. dobroydense, G. Cordreyi, &c. (Silver Flora Medal).

A batch of Onco-Regelia Iris sent from Holland by Mon. C. G. VAN TUBERGEN, junr., of Zwanenburg Nurseries, Haarlem, excited great admiration. These are hybrid Irises between the regelia and Oncocyclus types. The flowers are delicately veined on groundworks of various shades, such as brown, lilac, violet, &c. To one variety the Floral Committee granted an Award of Merit (see Awards) (Bronze Flora Medal).

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, again staged a number of novelties. No fewer than four new Primulas were presented, to one of which was granted an Award of Merit (see Awards). Primula nivalis farinosa has heliotrope-coloured flowers that are dotted with tiny white spots. The under surfaces of the leaves have a white farina, from which the species evidently derives its name. The inflorescence is from 6 to 8 inches in height. Another species, P. Cockburniana, has scarlet-orange-coloured flowers, and is illustrated on p. 331. Primula deflexa develops a tall inflorescence, the specimen shown being about 18 inches in height. It carries a dozen or more pale blue flowers of a pendulous habit. P. vittata is described under Awards. A batch of Clematis montana var. rubens formed a striking feature (see Awards). We also noticed well-grown plants of Echium Wildpreti, Lobelia tenuoir var. rosea (see Awards), blue-coloured Hydrangeas, Boronia polygalifolia (a good greenhouse subject), Schizanthus wisetoniensis, Cinerarias, &c. (Silver Banksian Medal).

Messrs. Cannell & Sons, Swanley, Kent, exhibited a large number of herbaceous Calceolarias in pots, and a bright display of show Pelargoniums in vases. The Calceolarias represented a first-class strain, size, colour, and form being all alike good (Silver-gilt Flora Medal).

Messrs. Sutton & Sons, Reading, exhibited a number of forms of Primula japonica. The colours of the flowers were of many hues, ranging from almost white to dark crimson. The strain is evidently a desirable one. An edging of small Ferns and Isolepis gracilis gave a pleasing finish.

Messrs. Hugh Low & Co., Bush Hill Park, Enfield, Middlesex, staged a number of greenhouse plants. Their display of Carnations was excellent. The variety Enchantress was prominent on a fancy stand. There were also earthenware baskets containing Schizanthus wisetoniensis, Saxifraga pyramidalis (grown well), Auricula Queen Alexandra (a useful bedding variety of sulphur-yellow colour), Aphelexis humilis, Clerodendron Balfouri. The same firm displayed large specimen plants of Bougainvillea glabra Sanderiana and B. g. Cypheri, improved forms of the type, the latter having much larger bracts (Silver Banksian Medal).

Messrs. Thos. Cripps & Son, Tunbridge Wells Nurseries, Kent, staged a group of Japanese Maples, similar to that displayed by them at the last meeting (Bronze Flora Medal).

Mr. L. R. Russell, Richmond, furnished a long table with pot plants of Clematis. The variety Ville de Lyon has claret-coloured flowers. Edouard Desfosse is another good form with large mauve-coloured flowers (Silver Banksian Medal).

Messrs. T. S. Ware, Ltd., Feltham, Middlesex, set up an excellent exhibit of flowering subjects, having in addition to a grand display of alpine and hardy flowers, some good Roses and Carnations; hardy Orchids were included. We also noticed Polygonatum stellatum, Thermopsis montana (a Leguminous plant with spikes of pleasing yellow flowers), some well-grown examples of Ostrowskia magnifica, and Anemone palmata alba. The Oriental Poppy "Duke of Teck" is an excellent scarlet variety (Silver Banksian Medal).

Messrs. Cutbush & Son, Highgate, London, N., showed flowering shrubs and alpine plants. The alpines were arranged toward the front, the background being composed of Roses, Lilacs, Laburnums, Azaleas, Liliums, Pæonies, &c. Sarracenia flava was shown in flower. We also noticed a white form of Bletia hyacinthina. A batch of Lilium testaceum was prominent (Silver Banksian Medal).

Mr. G. Reuthe, Keston, Kent, in addition to a fine display of Tulips, showed some good things among hardy plants. We noticed a pan of Orchis fusca, and another containing Cypripedium pubescens. Fritillaria recurva has a lovely flower. Gentiana verna was shown well in this collection.

Mr. Amos Perry, Winchmore Hill, London, N., staged a batch of Phlox canadensis Perry's variety, a much improved form of the type.

Mr. Prichard, Christchurch, Hants, had a magnificent display of hardy plants, staged to advantage on the concert platform. The back row was furnished with tall spikes of Eremurus Elwesianus, while Irises, Oriental Poppies, Lupins, and a host of other herbaceous members were included. Papaver orientale Parkmanni is of the richest scarlet colour (Silver Flora Medal).

Messrs. Paul & Sons, The Old Nurseries, Cheshunt, showed a number of alpine and hardy plants, sprays of ornamental foliage, a collection of Lilacs, and a variety of flowering shrubs, interspersed with single Roses. Prominent among the latter was R. altaica, whose charming white flowers were developed in large numbers. Fagus tricolor and F. "Paul's Yellow-margined" are two showy Beeches (Bronze Flora Medal).

The Misses Hopkins, Mere, Knutsford, Cheshire, showed a small collection of border-plants and a number of hardy Ferns.

Mr. E. Potten, Camden Nursery, Cranbrook, Kent, showed a collection of named varieties of Lilacs. The same exhibitor also brought an improved form of Trollius europæus that attracted attention; Roses, Aquilegias, Spiræas, and other flowers completed the group.

Messrs. J. Cheal & Son, Lowfield Nurseries, Crawley, exhibited flowering sprays of trees and shrubs, named varieties of Lilacs, Azaleas, Cytisus purpureus, Cercis siliquastrum, a double form of Prunus sinensis, &c.

Mr. Chas. Turner, Royal Nurseries, Slough, exhibited a collection of Lilacs (Bronze Flora Medal).

Miss Wilshere, The Frythe, Welwyn, Herts (gr. Mr. J. Fitt), showed several interesting plants, including Hæmanthus insignis in flower, sprays of Mackaya bella, forms of Lily of the Valley, including one with golden-striped foliage, &c.

T. Martin, Esq., Treverby, South Devon, showed a hybrid Rhododendron, named sanguineum, which has heads of rich scarlet-coloured flowers.

Messrs. Bell & Sheldon, Castle Nursery, Guernsey, exhibited a new Carnation named Mrs. Bertie Bell. The form is irregular, but the dark-crimson flower is very fragrant.

Another new Carnation was presented by Mr. Phillips, gardener to J. H. Beeston, Esq., Hunsdonbury, Ware, Herts. The colour is very similar to that of Mrs. Bertie Bell, but the flower is pompon-shaped, while the foliage is exceptionally strong in growth.

Mr. Richard Anker, Addison Nursery, Kensington, staged Myrtles, Drosera rotundiflora, small pots containing Ericas, &c.

Miss J. Easterbrook, Fawkham, Kent, displayed a basket decorated with Sweet Peas, on a groundwork of Maidenhair Fern and Woodruff.

Mr. R. Rasmussen, Eastville Nurseries, Waltham Cross, showed a batch of Petunias grown in small pots. They represented a good type of these plants.

Awards.

First-class Certificate.

Clematis montana rubens.—A coloured form of the well-known Clematis montana. The petals are suffused with pale-rose colour. The specimens exhibited were in small pots, and were crowded with their star-shaped flowers, thus proving the variety to be as floriferous as the older form.

Awards of Merit.

Primula vittata.—A new Chinese species of strong-growing habit, developing a flowering-spike 18 or more inches in height. The flowers are disposed verticillately and in more than one tier. The individual flowers are drooping, campanulate, about ⅝ inch across the mouth, and of a magenta-purple colour. The calyx tube is streaked with a white farina, that is also developed on the peduncle. The foliage is erect-growing, comparatively narrow, and markedly serrate.

Lobelia tenuior var. rosea.—As the name indicates, a rose-coloured form of L. tenuior, figured in the *Gardeners' Chronicle*, January 12, 1901, p. 46. The flowers are if anything larger than the blue form, and the colour resembles nothing so much as the bracts of Bougainvillea glabra. All the above came from Messrs. Jas. Veitch & Sons, Chelsea.

Iris Persephone.—A beautiful hybrid Iris, of the type that created such an impression when first shown by Messrs. Tubergen, on May 17, 1904. It is of large substance, and has beautiful black markings on a groundwork of purple colour. The standards are erect and arching. Presented by C. G. Van Tubergen, Jun., Haarlem, Holland.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (hon. secretary), De B. Crawshay, F. Wellesley, R. G. Thwaites, H. T. Pitt, J. Charlesworth, W. Cobb, G. F. Moore, J. W. Potter, A. A. McBean, H. G. Morris, W. Boxall, W. H. Young, W. H. White, H. J. Chapman, H. A. Tracy, H. Little, J. Colman, J. Douglas, H. Ballantine, and W. A. Bilney.

There was a very good show of Orchids, including some remarkably fine Odontoglossums.

Baron Sir H. Schröder, The Dell, Egham, was awarded a Silver-gilt Flora Medal for an extensive group, in which were two fine examples of Odontoglossum × excellens, with enormous bulbs and fine spikes of flowers. The original was exhibited at the Orchid Conference, May, 1885; also the finely-blotched O. crispum Luciani, and other spotted forms; O. × Adrianæ varieties, O. cordatum, and other Odontoglossums; Cattleya Skinneri and its white variety C. Mendeli; two strong plants of Cypripedium callosum Sanderæ, each with three flowers; C. Lawrenceanum Hyeanum, large plants of C. × Euryale, C. × grande, C. × superciliare, and other hybrids; a fine example of Cymbidium Devonianum, Masdevallia tridactylites, M. Wageneriana, M. bella, and other Masdevallias; Trichopilia crispa marginata, Nanodes Medusæ, Dendrobium × illustre, Cochlioda Noezliana, and some Lælias and Lælio-Cattleyas.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr., Mr. Thurgood), was awarded a Silver-gilt Flora Medal for a fine group rich in Odontoglossums, the stateliest among which was a noble plant of Odontoglossum × Wilckeanum Pittiæ, with a fine spike of very large yellow and red-brown flowers, and which had previously been awarded a First-class Certificate. On the present occasion a Silver-gilt Flora Medal was voted to Mr. Thurgood, the grower, for continued excellence of culture. Other remarkably good Odontoglossums were O. crispum Princess Victoria, O. c. guttatum, O. c. Maud Rochford, O. c. "Fairy Footprints," and O. c. Rosslyn variety, all finely spotted; O. Pescatorei Pitt's variety, one of the best purple blotched varieties; O. × mulus, O. luteo-purpureum Vuylstekeanum, O. × loochristyense harvengtense, and other hybrid Odontoglossums; Cattleya × Roehrsiana, and the new and fine C. × Pittiæ (see Awards); Dendrobium Victoria Regina, with fine blue-tipped flowers; Lycaste × Balliæ superba, Maxillaria Sanderiana, three good Anguloa Clowesii, Cattleya intermedia Parthenia, alba and Lowryana; Brassia maculata, Cypripedium callosum Sanderæ, and other Cypripediums; Lælia purpurata varieties, including the light-coloured Littleana and Russelliana; various hybrid Cattleyas, Lælio-Cattleyas, and the singular green-flowered Epidendrum latilabre, an ally of E. umbellatum.

H. S. Goodson, Esq., Fairlawn, Putney (gr., Mr. G. E. Day), secured a Silver Flora Medal for a pretty and varied group, comprising good Odontoglossum crispum, O. × Adrianæ, O. Hunnewellianum, and other Odontoglossums; Miltonia vexillaria Goodsoniæ, a very handsome bright purplish-rose flower (the specimen bore four spikes); Lælio-Cattleya × Goodsoni (L.-C. × Phœbe × C. Mendeli), with bright orange-coloured flowers and violet-purple front to the lip; some very good Cattleya Mendeli, and a finely-coloured C. Schröderæ of the C. S. Pittiana class; C. Lawrenceana, Lælio-Cattleya × Ascania, a remarkable form of Oncidium crispum, Cœlogyne speciosa, and many Cypripediums.

The Right Hon. Lord Rothschild, Tring Park (gr., Mr. Arthur Dye), sent a fine specimen of Lælia purpurata Tring Park variety, a dark-coloured form of the L. p. Brysiana class.

The Right Hon. Lord Auckland (gr., Mr. Matthews), sent fine cut spikes of Lissochilus Krebsii, Oncidium sphacelatum, and Broughtonia sanguinea.

Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins), showed Lælia purpurata "Mrs. R. A. H. Mitchell," a pretty white form with violet-purple-coloured disc to the lip; Cattleya Skinneri "Minnie," silver-white with a purple base to the lip; Cypripedium Lawrenceanum "Majestas," with a very fine dorsal sepal; and Lælio-Cattleya × Lucia Westfield variety.

Messrs. John Cowan & Co., Gateacre, Liverpool, showed a lavender-tinted Cattleya Mossiæ, and Odontoglossum crispum "Edith Bolton," a very singular form with the thick texture and broad petals of the O. c. "Marjorie" class, flowers white, the broad petals having a few reddish spots inside the margin, which is flecked with cinnamon-brown colour.

C. J. Lucas, Esq., Warnham Court (gr. Mr. Duncan), showed Brassia Gireoudiana.

John S. Moss, Esq., Wintershill House, Bishop's Waltham, sent an inflorescence of a fine purple blotched Odontoglossum crispum.

Messrs. Hugh Low & Co., Enfield, staged a group in which were the handsomely spotted Odontoglossum crispum "Jeanette," and O. × Andersonianum Low's variety, Cattleya intermedia alba, varieties of C. Mossiæ, and good Dendrobium Bensonæ.

Awards.

FIRST-CLASS CERTIFICATES.

Cypripedium × *Dom Carlos "Rex"* (Godefroyæ leucochilum × Lawrenceanum), from NORMAN C. COOKSON, Esq., Oakwood, Wylam (gr., Mr. H. J. Chapman).—A fine improvement on the original variety for which Mr. COOKSON previously had a Certificate. Flower large and round in all its parts; upper sepal white with purple dotted lines; the broad petals white, evenly spotted with purple. Lip cream-white with purple spotting at the opening of the pouch.

Cattleya × *Pittiæ* (Harrisoniana × Schilleriana).—A charming variety with several flowers on each spike, the individual flowers approaching those of C. Schilleriana in form, but of an uniform warm purplish-rose colour, with a few crimson spots on the sepals. Front lobe of the lip blush-white with close striation of dark rose colour.

AWARD OF MERIT.

Dendrobium × *Venus Cookson's variety* (Falconeri × nobile).—A very fine flower partaking more of D. Falconeri than the other fine Oakwood hybrid, D. × Venus grandiflorum, a large and heavily-flowered specimen of which was shown for comparison. Flowers white with rich rose-crimson outer halves to the segments. Disc of lip of maroon and orange colours.

Odontoglossum × *Lucasianum heatonense* (Hallii × cristatellum), from Baron SCHRÖDER (gr. Mr. Ballantyne).—Sepals and petals purplish-chocolate, except the pale-yellow tips and margin. Lip cream-white spotted with brown around the crest.

Zygopetalum × *Crawshayanum* (xanthinum × stapelioides), from De B. CRAWSHAY, Esq. (gr. Mr. Stables).—The largest and handsomest of the Promensea section of Zygopetalum. The pretty dwarf plant bore two flowers, each 2½ inches across; golden-yellow with a greenish tint showing through from the back. Sepals bearing a few, and the petals and lip numerous effectively-arranged purplish-red markings. The record says, "Cross made July 20, 1901; [resultant seeds] sown February 9, 1902; [[plant] bloomed May 15, 1905.

BOTANICAL CERTIFICATE.

Polystachya Haroldiana, from NORMAN C. COOKSON, Esq., whose son HAROLD sent the plant from the region of Lake Tanganyika.—A pretty tufted plant with short compressed pseudo-bulbs and bright-green leaves. The short inflorescences bore five flowers, each nearly 1 inch across, and white with a greenish tint on the sepals.

CULTURAL COMMENDATION.

To Mr. May, gr. to J. B. JOEL, Esq., Northaw House, Potters Bar, for an enormous plant of *Cypripedium Rothschildianum* in fine health, and bearing three tall spikes, each with five flowers open and one bud. A noble specimen.

Narcissus and Tulip Committee.

Present: H. B. May (Chairman); and Messrs. Robert Sydenham, John R. de C. Boscawen, R. W. Wallace, J. T. Bennett-Pöe, James Walker, W. Poupart, E. A. Bowles, G. Reuthe, Walter T. Ware, J. D. Pearson, and Chas. H. Curtis, Secretary.

Messrs. WALLACE & Co., Colchester, had a fine collection, among them highly-developed blooms of Margaret, Gala Beauty, Gesneriana rosea, G. lutea, Madame Krelage, Clara Butt, Mrs. Farncombe Saunders, and several of the May-flowering species and varieties (Silver-gilt Flora Medal).

Messrs. BARR & SON, King Street, Covent Garden, staged a large and varied collection, which included Clara Butt, The Moor, Snowdon (white tinted pink), Baron de la Tonnag, Yellow Goblet (deep yellow), Early Dawn, Caledonia, Emanuel Sweet, &c.; also quite a collection of rectified English Tulips and others (Silver Flora Medal).

Messrs. A. DICKSON & SONS, Belfast and Dublin, staged a fine and striking collection, among them Yellow Queen, Duchesse de Modena, Nauticus, Royal Blue (of a novel colour), Gesnerianæ lutea, Jaune d'Œuf, The Dove, Suzon, La Tulipe Noire (very dark), Grand Master, Bronze King, Mrs. Moon. The Fawn, &c. (Silver-gilt Flora Medal).

Messrs. R. H. BATH, Ltd., Wisbech, staged a representative collection; some of the best were Cordelia (purple-rose), Edmee, Landella, Margaret, Isabella, Mrs. F. Saunders, Bouton d'Or (very fine flower), The Sultan, &c. (Silver-gilt Banksian Medal)

Messrs. HOGG & ROBERTSON, Mary Street, Dublin, staged a fine collection of superbly-developed flowers, which included Vitellina, Bouton d'Or, Millet (rich dark crimson), Theodore Jorisen, Ges. lutea, The Fawn, Yellow Perfection, Mrs. F. Saunders, Macrospila, Glow, Faerie Queen, Mrs. Moon, Sultan, Exquisite, Louis Memmerel (a fine rose self), Bride of Haarlem, Margaret, Madame Krelage, Firefly, &c. (Silver-gilt Banksian Medal).

Mr. G. REUTHE, New Plant Nursery, Keston, had some finely-developed flowers, such as Isabella Whistler, Buffon, Emilee, Harry Veitch, Rose Queen, &c. (Silver Banksian Medal).

Mr. A. WILSON, Spilsby, also had a collection of the leading Darwin and May-flowered varieties in well-developed blooms (Silver Banksian Medal).

Messrs. VEITCH & SON, Chelsea, had Margaret (very fine); Mrs. Krelage, Salmon King, Caledonia, Claude Gillot, Early Bird, Anna Paulowna, with "Parrot" and other varieties.

Messrs. W. BULL & SONS, King's Road, Chelsea, had a small collection, the blooms being rather undersized on the whole, but containing some good varieties.

AWARDS OF MERIT.

The following new varieties received Awards:—

Whistler, Darwin. — Bronzy-crimson-flamed and feathered with scarlet; dark base. A fine bold flower. From Mr. G. REUTHE.

Innocence.—A May-flowering variety, with long, pointed petals; white with yellow base. A fine addition.

Quaintness, having a rosy-lilac flame on each petal, with broad golden margin and golden base. A very fine late-flowering variety of good form.

The two foregoing varieties were from Mr. W. T. WARE, Inglescombe Nurseries, Bath.

Fruit and Vegetable Committee.

Present: Mr. A. H. Pearson (Chairman); and Messrs. H. Somers Rivers, O. Thomas, C. Foster, J. Jaques, G. Reynolds, F. Lane, Geo. Kelf, J. Lyne, H. Parr, John Basham, Horace J. Wright, Edwin Beckett, A. Dean, S. Mortimer, Geo. Woodward.

The principal exhibit brought before this Committee was a splendid collection of early-forced fruit, shown by Mr. Jas. Hudson, gr. to LEOPOLD DE ROTHSCHILD, Esq., Gunnersbury House, Acton. Three trees of "Cardinal" Nectarines and one of Early Rivers' Plum, all well furnished with fruits, were staged as the background, and in front were arranged boxes and baskets of Cherries, Peaches, Plums, and Strawberries. Cherries were more numerous, and included the varieties Belle de St. Tronc, Bigarreau de Schreken, Governor Wood, May Duke, Early Rivers (a box of perfect fruits), Empress Eugénie, Frogmore Early Bigarreau, Guigne d'Annonay, and Elton Cherry. A box of Royal Sovereign Strawberries looked tempting (Silver Knightian Medal).

A dozen punnet baskets of Royal Sovereign Strawberries were shown by Mr. C. Page, gr. to J. B. FORTESCUE, Esq., Dropmore, Bucks. The fruits were splendidly finished, and received a Cultural Commendation.

A box of Strawberries was also staged by the Earl of PORTSMOUTH, Whitchurch, Hants (gr., Mr. R. Percy).

Mr. JAS. FITT, the Fythe Gardens, Welwyn, Hants, showed a dish of Vilmorin's Early Dwarf French Butter Bean. The pods are butter-yellow in colour.

Award.

AWARD OF MERIT.

Cucumber Delicacy.—The fruits are very dark in colour, about 14 inches in length, with a good base, and one that is not greatly attenuated, thus rendering almost the whole of the berry edible. It was raised from Matchless × Aristocrat. Shown by Mr. S. MORTIMER, Rowledge, Farnham, Surrey.

NATIONAL TULIP.

MAY 23.—The Committee of the above Society are to be congratulated on the extent of their twelfth annual Southern Exhibition on above date, and, considering the retarding character of the season, on the general good quality of the exhibits. Miss WILLMOTT was successful in several classes, the warm southern position of her garden being in her favour; her stand of six dissimilar breeders was really superb. Lancashire sent its usual contingent of exhibitors, also Cambridge. There was excellent competition in all the leading classes, and visitors appeared to be greatly interested in the brilliant markings of the rectified flowers, and the richness of many of the self breeders. Manchester representatives pronounced it the very best Tulip Exhibition which had been held during the last fifteen years, and the Southern Show has now leaped into the first position. It was interesting to note that several counties sent competitors; flowers came from Wales, Cheshire, Cambridgeshire, Essex, and elsewhere, which goes to show that there has been a great growth of interest in the old-fashioned florists' Tulip.

Rectified Tulips.—In the competitive classes there were some stubborn fights for 1st positions. With twelve dissimilar, two flamed and two feathered in each class, Mr. J. W. BENTLEY, Stakehill, Manchester, was placed 1st, having good, even, bright, well-marked blooms of flamed Lord Stanley and Samuel Barlow, and feathered Garibaldi and Masterpiece, flamed bybloemens Talisman and Chancellor, feathered bybloemens Hannah and Elizabeth Pegg, flamed roses Annie McGregor and Lady C. Gordon, feathered roses Sarah Headley and Modesty. Mr. C. W. NEEDHAM, Kelmscott, Hale, Cheshire, came 2nd with flamed bizarres Samuel Barlow and Sir J. Paxton, feathered bizarres Masterpiece and W. Wilson, flamed bybloemens Geo. Ed. Schofield and Adonis, feathered bybloemens Bertha and Trip to Stockport, flamed roses Mabel and Annie McGregor, feathered roses Modesty and Mrs. Lea. Miss WILLMOTT, Great Warley, was 3rd with some well-marked flowers. Other prizes were awarded.

In the class for six blooms, one feathered and one flamed in each class, Mr. A. D. HALL, Harpenden, Herts, was 1st among six competitors, having flamed bizarre Samuel Barlow, feathered bizarre Everard, flamed bybloemen Geo. Edward, and feathered Elizabeth Pegg, flamed rose Annie McGregor, feathered rose Mabel. 2nd, Mr. J. W. BENTLEY, with bizarre flamed Lord Stanley, feathered bizarre Sulphur, flamed bybloemen Talisman, feathered bybloemen Duchess of Sutherland, rose flamed Mabel, and feathered rose Modesty. 3rd, Miss WILLMOTT.

With three feathered Tulips Miss WILLMOTT was placed 1st, having bizarre Lord Lilford, bybloemen Bessie, and rose Modesty. Mr. J. W. BENTLEY was 2nd with bizarre William Annabel, bybloemen Queen of May, and rose Modesty, There were seven entries in this class and seven in that for three flamed, the awards going as follows: 1st, Mr. W. PETERS, Hartington Grove, Cambridge, who had bizarre S. Barlow, rose Mabel, bybloemen Duchess of Sutherland. Mr. J. W. BENTLEY came 2nd with bizarre Samuel Barlow, rose Mabel, and bybloemen May Queen. Miss WILLMOTT was placed 3rd.

Breeder Tulips.—Some highly-finished blooms were shown in these classes, and Miss WILLMOTT proved very successful in several classes. There were eight stands of six dissimilar blooms, Miss WILLMOTT taking the 1st prize with bizarres Goldfinder and Hepworth's 180, roses Anne McGregor and Industry, bybloemens Janette and Martin's 117—a meritorious half-dozen flowers. Mr. A. D. HALL was 2nd, also with some very good blooms of bizarres Alfred Lloyd and Sir J. Paxton, roses Loveliness and Rose Hill, bybloemens Ashmorle's 112 and Adonis. 3rd, Mr. C. W. NEEDHAM. With three dissimilar breeders, one of each class, Miss WILLMOTT was also 1st with bizarre Hepworth's 15/64, rose Mrs. Barlow, and bybloemen Bridesmaid. 2nd, Mr. A. CHATER, Cambridge, with bizarres Sir J. Paxton, Mrs. Barlow, and Bridesmaid.

Single Blooms of Rectified Flowers.—Flamed bizarre Samuel Barlow was placed 1st and 2nd, both from Mr. BENTLEY; Sir J. PAXTON was 3rd. Feathered bizarre: Miss WILLMOTT was 1st with Lord Stanley; the 2nd and 3rd flowers were not named. Feathered rose: Miss WILLMOTT was 1st with Modesty, and 3rd with Miss Nightingale; Mr. BENTLEY taking 2nd with Sarah Headley. Flamed rose: Miss WILLMOTT was 1st and 2nd with Annie McGregor; and Mr. BENTLEY 3rd with Aglaia. The best feathered bybloemen was Elizabeth Pegg, but the name of the exhibitor was not apparent; Miss WILLMOTT came 2nd with Mrs. Jackson, and 3rd with Guido. The best flamed bybloemens were Talisman from Mr. BENTLEY, and he was 3rd with Chancellor; Mr. HALL was 2nd with George Edward.

Breeder Tulips.—Bizarres: 1st, Alfred Lloyd, shown by Miss WILLMOTT; tho variety Wm. Lea was 2nd, but the exhibitor's name was not found; Mr. CHATER was 3rd with James Smith. Bybloemens: Talismar, from Miss WILLMOTT, who was also 2nd with Leach's No. 1, and 3rd with Jeannette. Roses: 1st, Mr. A. CHATER with Mrs. Barlow; 2nd, Miss WILLMOTT with Annie McGregor, and 3rd with Lady Grosvenor.

The Samuel Barlow Memorial Prizes.—These commemorate the services rendered to the advancement of the Tulip by the late Mr. Samuel Barlow, and five prizes are offered in a special class for two rectified Tulips, one feathered and one flamed, of any class. Mr. J. F. Kew, Southend, was placed 1st.

The following classes were open to growers of limited collections of English Tulips:—Six dissimilar rectified blooms, Mr. J. F. Kew was 1st with bizarres Sir J. Paxton and Sulphur; byblœmens King of the Universe and Adonis; rose Mabel and one unnamed; 2nd, Mr. R. W. Hall, Cambridge. With three feathered blooms Mr. Hall was 1st with bizarre Sir J. Paxton, byblœmen King of the Universe and rose Lloyds 200; Mr. J. F. Kew came 2nd with bizarre Richard Headley, byblœmen Elizabeth Pegg, and rose Modesty. With three flamed, Mr. J. F. Kew came 1st with Sir J. Paxton, Chancellor and Mabel; Mr. Hall being 2nd with Samuel Barlow, Elizabeth Pegg and Heroine. In the class for three dissimilar breeders Mr. Kew was the only exhibitor, having John Wills, Elizabeth Pegg, and Kate Connor.

Premier Blooms.—The premier feathered flower was bizarre William Annabel, a finely-marked flower, exhibited by Miss Willmott. The premier flamed bloom was bizarre Samuel Barlow, from Mr. J. W. Bentley. The premier breeder was byblœmen Bridesmaid, from Mr. A. Chater.

The Lecture.

A lecture was delivered by Mr. E. Morell Holmes on Medicinal Plants Old and New. The Lecturer pointed out that although horticulture must have begun at a very early period of civilisation, the plants required for medicinal use were chiefly collected from the fields and woods and were not specially cultivated. Even in the time of the Greeks and Romans, although horticulture had made great strides and pipless Apples and Grapes were known, Violets and Roses were found in winter, yet there is no record of distinct physic gardens. It was only in the records of monasteries, abbeys, and nunneries in the Middle Ages that we found any mention of a physic garden or portion set apart for the cultivation of medicinal herbs, usually near the surgeon's residence, and distinct from another portion of the garden retained for culinary herbs. One of the first lists of plants cultivated in these physic gardens was given in the *Capitulary of Charlemagne.* Subsequently wealthy citizens had physic gardens, and during the reigns of the Tudors there were physic gardens under the charge of the apothecary who attended Royalty. Private physic gardens were followed by municipal physic gardens, and these developed into the modern botanical gardens to which modern horticulture owes so much. Descriptive catalogues of the plants grown in these gardens, and containing an account of their medicinal properties were published by their owners and formed the "herbals" on which domestic medical treatment was based until the early part of the last century, when a large number of medical plants described in them were omitted from the pharmacopœias, and the herbals were succeeded by more advanced works on the medicinal plants official and the pharmacopœias. During the later half of the eighteenth century, the growth of the population led to an increased demand for medicinal plants and their preparations, and the cultivation of these was carried on on an agricultural rather than on a horticultural scale. The increasing use of quinine led to cultivation of Cinchona bark on a large scale in India and Ceylon, followed by that of Coca in various colonies. The Lecturer also alluded to the cultivation of Indian Hemp for medicinal purposes, and to the ancient and more extensive cultivation of the opium Poppy in various countries. The lecture was illustrated by numerous photographs, showing ancient gardens, also the cultivation of medicinal plants in farms in this country, and of Cinchona and Opium in India.

PUBLICATIONS RECEIVED. — *Southern Rhodesia*: Information for Settlers. Southern Rhodesia is here said to offer prospects for successful farming operations, and to be specially favourable for raising Maize, Wheat, Root crops, Tobacco and Cotton. This publication is attractively illustrated, and contains maps and illustrations useful to intending settlers.—*Transactions of the Royal Scottish Arboricultural Society*: Vol. xviii., Jubilee Volume. Among the contents are the President's Address, Forestry in Britain the Last Fifty Years, Reports on Excursions, Planting Waste Land for Profit, G. U. MacDonald; Colorado Variety of the Douglas Fir, the Douglas Fir Plantation at Taymount, &c.

INTERNATIONAL HORTICULTURAL EXHIBITION AT PARIS.

May 20 to 26.—An International Horticultural Exhibition was opened by President Loubet, who was accompanied by Madame Loubet, on May 20, in the building known as Cours-la-Reine, Paris. Two separate buildings, erected in 1900, were utilised for this purpose, and a temporary structure of large size was erected between them to connect the two. The buildings thus joined covered an immense area, and at the same time their appearance was perfectly harmonious.

The deputation from the Royal Horticultural Society, mentioned on p. 328, awarded a large number of medals for exceptional exhibits, and those included two Gold Medals to the well-known firm of Messrs. Vilmorin, Andrieux et Cie. Messrs. W. Cutbush & Sons were the only English nurserymen represented by an exhibit, but visitors from England were numerous, and it has to be remembered that the near approach of the Temple Show may have deterred some of them from making exhibits. The show was remarkable for the displays of Rhododendrons, Pelargoniums, Annuals in flower, and flowering plants generally; also for devices of florists' flowers and collections of vegetables.

The disposition of the exhibits and the constituents in every exhibit were beyond praise, and the display afforded effects much superior to those of any exhibition we have attended in Britain. In connection with the event, which lasted over nine days, there were several social gatherings and receptions, in addition to a congress for the discussion of matters relating to the cultivation of plants, &c. Some details of the show are given below.

NEW OR RARE PLANTS.

Herr W. Pfitzer, Stuttgart, Germany, exhibited a plant of a species of Ficus, brought from the "Côte d'Ivorie," having lanceolate, acuminate leaves 1 foot in length, and 1 inch across in widest part; also a new Aloe from Madagascar. Verbena hybrida "Etoile de Stuttgart" had white flowers with a vivid red stripe on each petal, and making a coloured star upon each flower, being very effective.

A plant of Davidia involucrata, about 4 feet high, was shown by M. G. Boucher, nurseryman, Avenue d'Italie, Paris.

A magnificent plant of the new Anthurium "Illustrée," a variety exhibited first at Ghent seven years ago, was included in a group of Codiæums, Marantas, Nepenthes, and other choice foliage plants shown by Messrs. Chantrier Frères, Mortefontaine, Oise, who had an excellent collection of Sonerillas and Bertolonias. Other new plants shown by Messrs. Chantrier were as follows:—Codiæum "Duchesse de Gramont" (Silver-gilt Medal), a variety with broad leaves, the older ones being coloured green, yellow, and red, and about twelve of the younger ones wholly of a light red colour. This was a well-grown plant of a very beautiful variety. Kæmpferia Roscoeana (Silver-gilt Medal) was a plant with broad, ovate leaves, with recurved margins, coloured with shades of green and brown. A species of Maranta from Brazil (Silver-gilt Medal), having perfectly green leaves about 1½ foot long and nearly as wide; also Musa sapientum rubra, which has been already illustrated in these columns.

ORCHIDS.

The most important class for Orchids was one for 100 specimens in pots. The coveted Prix d'Honneur was awarded to M. A. Marcoz, nurseryman, Villeneuve St. Georges (S.-et O.), and the same exhibit was awarded a Silver-gilt Flora Medal by the deputation from the Royal Horticultural Society (England). Among the most beautiful plants in the exhibit were excellent specimens of Odontoglossum crispum in very choice varieties, Phalænopsis grandiflora, P. Rimestadtiana, Lælia purpurata, L. tenebrosa, Cypripedium Rothschildianum, many Cattleyas, Oncidiums, Miltonias, &c. An Oncidium shown as O. species had magnificent flowers of great substance and rich brown-and-yellow colours. It is of the type of O. crispum, but of higher merit. 2nd, M. G. Lesueur, 65 bis, Quai Président Carnot, Saint Cloud, Seine-et-Oise.

The best collection of Lælias, Cattleyas, and Lælio-Cattleyas came from M. Chas. Maron, nurseryman, Brunoy, whose largest plant was a well-flowered specimen of L.-C. Mozart (Cattleya lobata × C. Lawrenceana). There were sixteen open flowers, and all of them were richly coloured, the colour in the lip being especially good. The curious Cirrhopetalum Mastersianum was shown in beautiful condition, with eight of its remarkable brownish, old-gold coloured flowers arranged in a semicircle at the end of the peduncle. Lælia-Cattleya × Hyeana and L.-C. callistoglossa were very good.

A class for Vandas, Phalænopsis, and Aërides was won by M. Alexandre Régnier, nurseryman, 44, Avenue Marigny, Fontenoy-sous-Bois (Seine). The Phalænopsis were best represented in this group, and were of one species only, P. amabilis. A plant of P. a. Dayana var. Regnieri having twenty-six extremely fine flowers on one spike was given a special award of a Silver-gilt Medal. Vanda cœrulescens and several species of Aërides were also shown. A specimen of A. Sanderiana superba, almost like a bush, with growths nearly 4 feet high, bearing profuse and vigorous-looking foliage, was given the special award of a Silver-gilt Medal, although not in flower. There are few such specimens in which the leaves have been retained to the base as they have been in this instance. A hybrid Cattleya obtained from a cross between Lælia purpurata and Cattleya Mendeli, and bearing the name of C. Regnieri, was also awarded a Silver-gilt Medal, as shown by M. Regnier. It is specially remarkable for its extremely large, broad-spreading, richly-marked labellum.

In a class for a collection of twenty-five Orchids in flower, M. Magne, 15, Boulevard de Boulogne, Boulogne-sur-Seine, was awarded a Gold Medal for an excellent exhibit.

M. Dugourd had an interesting exhibit of Orchids indigenous to the Forest of Fontainebleau and its surroundings; species of Listera, Ophrys, and Orchis were represented (Silver Medal).

M. Robert Lebaudy, amateur, 24, Rue de Mesmes, Bougival, Seine-et-Oise, included some very pretty specimens in a collection of fifty Orchid plants, for which he obtained the 1st prize, Miltonia vexillaria and Lælio-Cattleya × cinnabarina being noteworthy. Messrs. Duval et Fils, Versailles, who were placed 2nd, had a very pretty specimen of Cattleya Skinneri, &c.

STOVE FOLIAGE PLANTS.

Messrs. Duval et Fils, 8, Rue de l'Ermitage, Versailles, were awarded a Gold Medal for an excellent collection of twenty distinct varieties of Anthurium Scherzerianum. We noticed Etandard (deep red), General Marcitte (mottled), and La Belle France (mottled), as being among the best. Messrs. Duval had other exhibits of Anthurium, and groups of well-grown Caladiums, for which Gold Medals were awarded them.

A very fine collection of stove and greenhouse plants, including a few Orchids. such as Vanda teres, Miltonia spectabilis, &c., was shown from the Luxembourg gardens.

A magnificent specimen of Phœnix canariensis, from M. J. Villebenoit, La Victorine Nursery, Nice, was awarded a Gold Medal.

Some seedling varieties of Anthurium in flower came from the authorities of the Royal School of Horticulture of Florence (Italy). Some of the spathes were of the Andreanum type, but others were of very much larger size, and almost green in colour. A variety named Madame Valassi, with a broad, pure white spathe, was remarkable, and several others of deep red colour possessed considerable horticultural value. The exhibit was awarded a large Gold Medal, and by the Royal Horticultural Society (England) a Silver Flora Medal.

Anthurium Scherzerianum variety, shown by Messrs. de Bosschère & Co., Eecheren, Antwerp (Belgium), was a magnificent specimen in a tub, which bore a very large number of good spathes, resembling those of the variety "Wardii" (large Silver-gilt Medal). The same exhibitors had a collection of Anthuriums for which a large Silver-gilt Medal was awarded.

Stove and greenhouse plants from Messrs. L. V. Charon Fils, nurserymen, Paris, were capital, and included Palms of sizes and appearance such as we never see at exhibitions except when visiting Ghent or other places on the Continent. Anthuriums from the same amateur were excellent, and a variety of the A. Andreanum type named Robert Lebaudy, was as good as can often be seen (Gold Medal). Each of the fourteen plants of Begonia Gloire de Lorraine were 3½ feet across, and in as perfect condition and flower as we are accustomed to see this popular plant in December. It would appear that the Parisians flower the variety during the greater part of the year.

The best Caladiums were shown by M. Robert Lebaudy, amateur, Bougival (S.-et-O.) (gr., M. J. Page). The specimens in this exhibit were in large-sized pots, and being well-developed, highly-coloured, choice plants, were more nearly equal to the quality of the best plants exhibited at our own shows. The Prix d'Honneur was awarded them. The same amateur was awarded the Prix d'Honneur for Codiæums (Crotons), which, though good, would not surprise Englishmen.

Messrs. Rivoire, Père et Fils, nurserymen, Lyons, exhibited a considerable number of Caladiums as small plants, but representative of the choicest varieties (Silver-gilt Medal).

Messrs. Anatole Cordonnier et Fils, Bailleul, obtained a Gold Medal for Codiæums (Crotons), the specimens being from 3 to 4 feet high, and of good culture and development.

The Syndicat Horticole de la Région Parisienne made a display with Palms, Viburnums, Lilacs, Hydrangeas, Pelargoniums, Bougainvilleas, Roses, &c. (Gold Medal and Royal Horticultural Society's Silver Flora Medal).

GREENHOUSE FLOWERING PLANTS.

The zonal Pelargoniums from M. E. Poirier, nurseryman, Versailles, in which the colours were bedded out in triangles and panels of different shapes, formed one of the brightest features of the show. The plants were grouped in beds which surrounded three sides of a little grass lawn, and the Pelargoniums represented an arch lying on the ground. The varieties were of the very best and represented the brightest colours, whilst the cultivation and arrangement of the plants could hardly have been better carried out. The exhibit was awarded a Prix d'Honneur, and from the Royal Horticultural Society (England) a Silver-gilt Flora Medal.

M. Ch. Molin, Lyons, had a group of decorative Pelargoniums in pots, and F. Foucard Fils, Orleans, another group of similar plants (a Gold Medal and Silver-gilt Medal respectively).

Messrs. Piennes et Larigaldie, Successeurs Marchands Grainiers, 14, Quai de la Mégisserie, Paris, were awarded a Gold Medal for an extensive group of Cannas flowering in pots. Most of the varieties were similar to those shown so well in England by Messrs. H. Cannell & Co., but Curé (yellow), Inédit (rich apricot colour), and Comte de Bouchard (rose-colour), were of fine merit and less familiar (Large Gold Medal).

Messrs. Billiard et Barrie, Fontenoy, also obtained a Gold Medal for Cannas.

Metrosideros floribunda was grown grandly by M. Derudder, Nurseryman, Versailles, as standard plants 4 feet high, and covered freely with flowers. There were some two dozen plants, and the brilliant red colour was very effective, the plants being equal to any we have seen at Ghent or other continental shows (Gold Medal and Royal Horticultural Society's Silver-gilt Medal).

M. Aug. Nonin, Nurseryman, 20, Avenue de Paris, Chatillon-sous-Bagneux, exhibited Marguerite "Coronation," a very large-flowered Fuchsia named Robert Blatry, also Begonia gigantea, Impatiens Holste, with exceedingly bright orange-red coloured flowers (very noteworthy), Carnations, Pelargoniums, &c., and was awarded several honours.

The only important exhibit of Cactaceous plants was shown by M. Charles Simon, St. Ouen (Seine), but this was of very large extent, the group of Phyllocactus alone including several hundreds of plants in infinite variety, as well as of Mamillarias, Echinopsis, Cereus, Aloe, Agaves, Echinocactus, Opuntias, Euphorbias, &c. There were numerous well-cultivated specimens. The group was awarded a Prix d'Honneur, and a Royal Horticultural Society's Silver Medal.

Gloxinias, representing the best French strains of spotted varieties as well as a few plants that were more of the type of English florists, were shown grandly by Messrs. G. Fargeton Fils, 38, Rue Saumuroise, Angers. Two varieties were especially interesting, one of which had flaccid foliage that could be bent quite easily without breaking, an advantage when moving the plants or when arranging them near to other plants, and the other possessing rich cherry-red-coloured flowers with three paler stripes on each segment. The first-mentioned variety was called Madame Renée Fargeton, and the other Madame Louis Fargeton (Gold Medal and Silver Flora Medal from Royal Horticultural Society, England).

Messrs. Vallerand Frères, of Asnières and Taverney, also showed Gloxinias of very commendable merit, and they had a group of tuberous-rooted Begonias that would compare favourably with exhibits we may expect next week at the "Temple." The variety Phénomène or Monstruosa, a yellow flower, was one of the most curious developments we have yet observed in what is known as the "crested" section. "Rouge très foncé" was a single flower of extraordinary deep crimson colour. Caladiums from the same firm, and the exceedingly brightly-flowered Scutellaria Mociniana from the same firm were also worthy of remark (Gold Medal).

Messrs. Billiard Barrie, Fontenay, also showed Gloxinias (Gold Medal).

M. Arthur Billard, Succr., nurseryman, Avenue des Pages, Le Vesinet, was awarded a Gold Medal for a group of Tuberous-rooted Begonias, in which the types known in England were represented in good condition by plants of moderate size.

M. Aug. Chantin, Rue de l'Anaril Monchez, Paris, was also awarded a Gold Medal for Roses.

The exhibits of Carnations included a good one from M. Joachim Idot, gr. to Madame Ernest Dormeuil, 3, Rue de Saint Germain, Croissy. These plants were in pots, and the varieties of the Souvenir de la Malmaison type and of the "Tree" section were good, but not better than we are accustomed to see in England.

A collection of exotic species of economic plants was shown by M. Godefroy-Lebeuf, 4, Impasse Girardon, Paris, Montmartre; and another by the Minister for the Colonies, Jardin Colonial, Paris.

HARDY PLANTS.

Messrs. Cayeux et Le Clerc, 8, Quai de la Mégisserie, Paris, showed varieties of Tropæolum, said to have been obtained from crosses between T. Lobbi and T. peregrinum (canariense). They were of slender growth, very floriferous, and had laciniated petals. A pretty Calceolaria named "Phare" was also shown by this firm, and beds of annuals, Cinerarias, &c., for which a Gold Medal, &c., was awarded.

Messrs. Paillet Fils, Vallée de Chatenay, near Paris, exhibited a grand lot of Tree-Pæonies, which are worthy of appreciation. The flowers were numerous, of large size and of beautiful colour. A Gold Medal was awarded, and the Royal Horticultural Society's deputation awarded the group a Silver Flora Medal. The same firm had an exhibit of Clematis in pots that would hardly compare with similar ones to be seen at our own "Temple" shows.

Messrs. Honoré Defresne, Fils, Vitry, near Paris, also exhibited an excellent group of Tree Pæonies to name in an unusual number of varieties, the popular one known as Elizabeth being among the most effective (Gold Medal and from Royal Horticultural Society, England, a Silver Flora Medal).

Varieties of a curious type of Ageratum were shown by E. Dorsneau, Nurseryman, Rambouillet, in which the cellular parts of the leaves were puffed up above the ribs, the crinkled appearance thus caused being exceptional so far as our experience goes, but the altered effect would have little or no value in the garden.

E. Thiebaut, Sr., Place de la Madeleine, Paris, was awarded a Gold Medal for Tulips, the cut flowers being very fine. Another collection was shown by C. Angel et Fils, 10, Quai de la Mégisserie, Paris (Silver-gilt Medal).

A very large oblong bed was planted with varieties of Iris Kæmpferi by M. Tabar, Nurseryman, Montmorency, Seine-et-Oise. The plants were in pots, and the pots plunged. Most of the flowers were from 2½ to 3 feet high and of large size, the shades of colour being most charming. In effect this exhibit was one of the most gratifying features of the show. We have never seen this Iris exhibited in as good condition or with the colouring so tastefully disposed. A Gold Medal was awarded, and in addition the Royal Horticultural Society awarded a Silver-gilt Banksian Medal.

Messrs. Lemoine et Fils, Nancy, exhibited plants of their very fine hybrid Deutzias in flower; also large flower-sprays of varieties of Lilacs raised at Nancy. A plant in flower of the new yellow-coloured Pæonia lutea superba (illustrated in these pages after the last Ghent show), having two flowers, was an object of much beauty, and the best of the species we have yet seen (Gold Medal).

M. Grainier, Nurserymen, Avenue Victoria, Paris, and M. A. Séraud, Rue de Chatillon, Vauves (Seine), exhibited a group of hardy flowering plants in very good condition. Both were awarded Silver-gilt Medals, the latter firm the premier.

An exhibit in which plants of Azalea (Rhododendron) Anthony Koster were interspersed with R. Robert Croux (deep crimson) had a most agreeable effect, the colours being especially suited for mixing with each other. The exhibit was one from Messrs. Croux et Fils, Chatenay (Seine), who were awarded a Gold Medal. This firm and that of M. Moser et Fils, Versailles, showed very large bushes of numerous varieties of Rhododendrons and Azaleas, all of which were exceptionally good, being quite equal to anything of the kind we have seen at Ghent or other exhibitions. Many of the varieties, as Kate Waterer, have originated in our own country, and it was gratifying to see them as successfully cultivated as is possible even by our own firms of Waterer and others. Bed after bed was filled with plants from the firms mentioned above, and had time and space permitted it would have been possible to have made excellent selections of varieties in each section from the plants exhibited by these celebrated cultivators. Highest awards were made for these collections.

Messrs. Moser et Fils, Versailles, were also awarded a large Silver-gilt Medal for an exceedingly large Rhododendron bush of the variety Princesse Hortense, a variety with pink flowers marked with yellow spots. It was mounted very high.

Azaleas (Rhododendron indica) were not shown extensively owing to the season being advanced, but an exhibit of moderate-sized plants from Messrs. Royer Fils, Versailles, was of superior quality and obtained a Gold Medal.

ROSES.

One-half of a special Rose garden under cover was planted with dwarf plants and standards by Messrs. Levêque et Fils, 69, Rue du Liegat, Ivry-sur-Seine. These pot-plants, though not better than are shown in England, were nevertheless of excellent merit, and they were awarded the premier "Prix d'Honneur." Some of the flowers on the standard plants were of exhibition value, but we did not notice any new varieties especially noteworthy.

The other half of the same garden was planted similarly by Ad. Rothberg, Rue St. Denis, Gennevilliers, Seine, and was awarded a Prix d'Honneur.

Messrs. Levêque et Fils, Rue du Liegat, Ivry-sur-Seine, Paris, had in another situation a fine lot of standard Roses plunged in a bed and edged with the delightful variety Madame Lavavasseur. These were considered so good that a Premier Prix d'Honneur was awardod them, and the Royal Horticultural Society (England) awarded a Silver Flora Medal. The varieties Soleil d'Or lutea remontant and Persian Yellow were shown finely by the same exhibitors.

A bed of Roses of the Polyantha variety Madame Nerbet Levavasseur, shown by M. Boucher, Avenue d'Italie, Paris, was very fine. The plants were from 1 to 2 feet high, and were covered with their bright rose-coloured flowers. A group of hybrid Clematises of the C. lanuginosa type, from the same exhibitor, was noteworthy (Gold Medal). Standard Roses and dwarf plants of numerous varieties of several sections were exhibited from the same nursery. All were good in quality, and several gold medals were awarded.

M. Léon Jupeau, 135, Route de Fontainebleau, Kremlin-Bicêtre (Seine), showed a very large number of small Rose plants in pots, sufficient to indicate the speciality of the nursery, but not advanced enough to brighten the show (Large Silver Medal).

Standard Roses were also exhibited numerously by M. Th. Niklans, nurseryman, 23, Avenue Rouget-de-l'Isle, Vitry-sur-Seine. The plants were standards, with heads of somewhat small size, but very well flowered (Gold Medal).

FLORISTS' DEVICES.

Some German florists sent from Germany a collective exhibit of arranged flowers, which included devices of a more or less novel nature. Some wreaths, composed exclusively of such materials as Pinus sprays, Fern fronds, Echeveria plants with inflorescences, Sedums, &c., were sombre in the extreme. Among French florists M. J. Maïssa, Boulevard Haussmann, Cannes, and Monte Carlo, was awarded a Prix d'Honneur for a table of Cattleyas and Oncidiums, and a large bouquet in vase composed of red Anthuriums, yellow Richardias, and Oncidiums, which was admirable.

M. Lachaume, 10, Rue Royale, Paris, whose exhibits were much admired at the last Ghent show, displayed a table decoration in which a mirror extended almost the full length of the table, and upon which were large Bamboo stands, bent into designs, and lavishly decorated with Orchids. Bouquets of Roses and Cattleyas were arranged along either side of the mirror, and together afforded an effect of lavish flower and colour blended with such taste as to be agreeable and exceedingly rich to the eye.

Among other skilful florists who exhibited in this section were MM. A. Lorin, 53, Avenue Kleber, Paris; A. Girard, 71, Avenue Marceau, Paris; M. Ponceblanc, 12, Avenue de l'Alma, Paris; M. Lebosse, 3, Rue Mignard, Paris; R. Langlois, 11 bis, Avenue Victor Hugo, Paris; Ed. Debrie, 12, Rue des Capucins; and A. Lorin, Avenue Kleber.

ANNUAL FLOWERING PLANTS.

Several firms exhibited groups of annuals in flower arranged in beds, and of these the firm of Messrs. Vilmorin, Andrieux et Cie., 4, Quai de Mégisserie, Paris, was the best. It would be impossible to overstate the excellence of this exhibit, whether judged from the point of view of cultivation, excellence, or tasteful grouping. The major part of the plants were grouped in beds which had been built up in a sloping manner over portions of a very wide stone staircase on a side of a building having a much lower level than that of the centre of the hall, and with the waters of the Seine in view. All sorts of annuals, whether used for bedding out-of-doors or for cultivation in pots, appeared to be included in the different beds, and the quiet shades of colour possessed by the Nemesias, and the gaudy scarlet of the Poppies, were so arranged with every other shade of colour of the different varieties of plants, that each bed was a picture in itself; whilst the entire exhibit was a representation of almost every annual-flowering plant available for gardens. Messrs. Vilmorin were awarded a Gold Medal by the Royal Horticultural Society (England), and Gold Medals by the French Society. Other exhibits of Annuals were made by M. L. Férard, Rue d'Arcade, Paris, and several firms.

FRUITS AND VEGETABLES.

There were not many exhibits of fruits, but those that were displayed contained some excellent specimens.

Messrs. Anatole Cordonnier et Fils, Grapperies du Nord, Bailleul, showed Peaches, Grapes, Plums, Strawberries, &c., and were awarded a Prix d'Honneur, three Gold Medals, and in addition a Silver-gilt Knightian Medal by the Royal Horticultural Society England.

M. L. Parent, Rueil, exhibited pot fruit-trees which were carrying ripe fruits, such as Red Currants, Figs, Cherries, Plums, &c. These were exhibited in a glass cabinet, and reminded us of similar trees exhibited at Temple Shows by Leopold de Rothschild, Esq. Gold Medals were also awarded this exhibitor.

Messrs. Vilmorin, Andrieux et Cie. showed one of the most complete collections of vegetables and salads in season we have ever seen. The exhibit was several yards wide, and about 120 yards long. We were informed that nearly 800 varieties were included, and it may be therefore easily understood why detailed reference to it cannot be made. It must suffice to say that everything was shown in excellent condition, and that certain salads and vegetables not in common use in England might be observed there. Such were Portulaca oleracea, Claytonia perfoliata, "Valerianella" or "Mache Dorée," &c. (Royal Horticultural Society's [England] Gold Medal, and highest prizes from the Exhibition authorities). Several other collections were exhibited.

EXHIBITS OUT-OF-DOORS.

In addition to the space within the large buildings, all the surrounding ground was pressed into the service to accommodate exhibits of one kind or another. Trees and shrubs were bedded out by various firms, and they furnished a very agreeable effect. The display of garden implements and sundries was varied and extensive. Rustic summer-houses in great variety were shown by many continental firms.

M. Felix Mansion, Paris, staged wooden tubs for shrubs and trees; as also did MM. Bl. Loyre, Passy, Paris; Lelarge, Paris; and Paul Figures, Fils, Paris.

Plant-frames, greenhouses, &c., mostly constructed of iron with iron stagings, were shown by A. Michaux, Asnières; H. Rondier and A. Crouzet et Cie, Paris; Perrier, Fils, Paris; J. Girardot, Paris; Auguste Danrée, Alfortville, Seine, and many others.

M. J. C. Tissot, 31, Rue des Bourdonnais, Paris, staged mowers, mats, sphagnum moss, peat, syringes, and a general collection of horticultural sundries, including an ingenious machine for cutting sphagnum-moss ready for potting.

M. Thureau, Paris, also staged a good assortment of sundries, including the Pagoscope, recently described on p. 133.

Garden statuary in many beautiful designs was exhibited by M. Val d'Osre, Paris.

Several types of spraying machines were on the stand of M. F. Besnard, Paris, and samples of a metal unkinkable garden hose were noticed at the stall of MM. Allouard et Cie, 72, Rue du Chemin Vert, Paris.

Fruit-storing trays and racks were well shown by M. E. Jollinet, St. Prix, Seine-et-Oise.

Boilers occupied a large area and were shown by many Paris firms, including Durand Vaillant, Paul Lebeuf, L. Blanquier, Maitre et Fils, Perrier et Fils, Dedieu, and Hallay.

The Strebel Counterblast Boiler was exhibited by the Paris branch of the house of R. O. Meyer, Ltd., Norfolk Street, Strand, London.

ENGLISH EXHIBITS.

There were only two exhibits from England, though visitors from this country were numerous. Messrs. W. Cutbush & Sons, Highgate, London, made one of their characteristic displays of Carnations, in which the best varieties of the Souvenir de la Malmaison type and of the "Tree" section were included (Gold Medal).

The other exhibit from England was one of framed illustrations that have appeared at various times in the *Gardeners' Chronicle*. This was shown among other similar productions from France and other countries, and was awarded a Large Gold Medal.

Obituary.

ALFRED MASON.—We greatly regret to have to record the death of Mr. Alfred Mason, senior partner of the firm of Dobie & Mason, Manchester, which took place on Friday, May 12, 1905, on his sixty-eighth birthday. The business will continue to be carried on by his two sons, the remaining partners.

J. HOLLINGWORTH.—We regret to announce the death of Mr. J. Hollingworth, head gardener and agent to J. F. Campbell, Esq., of Woodseat, Staffs. Mr. Hollingworth, who had been in failing health for some time since, died on May 12, of heart-failure, at the comparatively early age of sixty years. Over twenty-five years ago Mr. Hollingworth took charge of the gardens at Woodseat, and, encouraged by an enthusiastic employer in the person of the late Colin Minton Campbell, Esq., won for himself a reputation as a Grape-grower, winning honours at the fruit shows in London, Birmingham, Manchester, Liverpool, and other places, while he excelled in all other branches of gardening. After a lengthy period of service Mr. Hollingworth left Woodseat to take charge of Lord Tredegar's gardens at Tredegar Park, Monmouth, and from there he moved to Margam Park, Glamorgan. A few years later he returned to Woodseat to take entire management of the estate and gardens, and continued there until his death.

REV. THEODORE HENRY MARSH.—We regret to announce the death of this gentleman, which took place on May 14, 1905, in his eighty-first year. He associated himself closely with horticulture, and took up the mantle of Nelson of Aldborough, that other good and genial parson who did so much for local floriculture, and in fact succeeded to his collection of bulbs; and for the last half-century or so the garden at Cawston was the local Mecca of Norfolk gardeners. His "Daffodil Teas," when until very recently he showed once a year collections of rarities to flower-lovers, became one of the most looked-for and most enjoyable local functions.

ANSWERS TO CORRESPONDENTS.

Asparagus Cultivation in Germany: *English Grower*. Various methods are followed, including the French one of planting rather deeply in 5-feet-wide trenches with wide alleys between, and uncovering the plants at the commencement of winter, the removed soil being piled up in the alleys, and the crowns afforded a dressing of decayed manure. The plant is very hardy, and under this amount of protection and the snow, which scarcely ever melts before the month of March, it is quite safe. When growth begins in April the removed soil is sifted gradually over the crowns to the depth it is desired the edible portion should attain; and in cutting the produce the soil, which, owing to the action of the frost is friable, is scraped away by the hand or with a small wooden paddle, and the shoot broken or cut off close to the crown, no injury being done to the neighbouring shoots, and the soil is returned over the crowns. When the cutting season has come to an end, the removed soil is wholly returned to the beds, and the surface is made level. By this method growth is made in darkness, and necessarily the shoots are white almost to the tip. The same result is obtained by planting at a lesser depth, throwing or raking the upper crust of soil of the beds into the alleys for the winter, dressing with manure and returning the soil to the beds in early spring, the growing shoots being covered with pots having lids to exclude the light or with flower-pots which have the apertures stopped with a plug of clay. The English method of planting is followed, i.e., on flat beds without alleys, the rows standing at 2½ to 3 feet apart, or in beds raised above the surrounding area by taking the soil out of the alleys which run between the beds, and adding it to that of the beds. This last is the best in heavy and very moist soils, for although the plant requires much root moisture when in growth, the water must not be stagnant or sluggish in the soil. In short, the drainage should be efficient in any case or the roots will decay and the produce be of poor quantity and quality. The firm of L. Späth, Baumschulenweg, bei Berlin, publish a little book of instructions on Asparagus-culture.

Books: *M. S. S. Handbook of Hardy Trees, Shrubs, and Herbaceous Plants*, by Decaisne and Naudin, translated from the French by W. B. Hemsley. It can be obtained from our Publishing Department.

Bulbs: *J. C. H.* We do not recommend particular firms. Scan our advertising columns.

Caterpillars: *S. G.* The caterpillars are those of the Vapourer-Moth (Orgyia antiqua). The creature is not at all particular what it eats. We fear we can suggest nothing but hand-picking.

Cupressus Lawsoniana: *Gilmurie.* We find neither insect nor fungus, and suppose therefore that the trouble is at the root. Perhaps the drainage is bad, or the roots have got down into soil that is not suited to their requirements.

Grapes: *Anxious.* The berries are spotted with a fungus (Glœosporium). It is too late to do anything but burn the affected berries. Next year try spraying with Bordeaux-mixture.

Hippeastrum Plant: *A. T.* We ourselves should certainly not accept an article that did not agree with the one ordered. We think your offer suggesting an exchange a very liberal and fair one.

Hollyhock Disease: *Salop.* The following preparation is recommended by Messrs. Webb & Brand, who make a speciality of these plants: To 1 lb. of Tobacco-powder add ¼ ounce of finely-powdered sulphate of copper, and well mix. Dust the under surfaces of the leaves with the powder every two or three weeks during the growing season, choosing dull, still days for the operations.

Japanese Pine: *M. G. B.* Probably it is Pinus parviflora. The fall of the leaf is a natural process, but you may have accelerated it by keeping the plant too dry. Keep the plants in an even temperature free from draughts. Apply water with discretion, but avoid the use of manure.

Names of Plants: *Paddy.* Sophora tetraptera microphylla.—*A. R.* Daphne collina var. Neapolitana.—*Herb.* Anchusa officinalis.—*Cecil.* 1, Prunus Padus (Bird Cherry); 2, Berberis vulgaris; 3, Cupressus nootkatensis, the Thuiopsis borealis of gardens; 4, Cupressus (Retinospora) pisifera; 5, Thuya occidentalis; 6, Thuya plicata (true), the T. gigantea of gardens.—*J. Y.* 1, Epidendrum vitellinum; 2, Dendrobium clavatum; 3, Maxillaria tenuifolia; 4, Pilea serpyllifolia.—*T. B. B.* Epidendrum selligerum.—*A. B.* 1, Odontoglossum Lindleyanum; 2, Odontoglossum Hunnewellianum; 3, Oncidium barbatum.—*W. D. M.* 1, Trillium grandiflorum (see last week's *Gardeners' Chronicle*, p. 308); 2, Cypripedium siamense; 3, Orobus vernus.—*E. L.* Prunus Padus, the Bird Cherry.—*C. B., Braintree.* Odontoglossum Hallii xanthoglossum.—*F. M., Epping.* Gongora bufonia.—*C. W. P.* Cupressus sempervirens.—*S. T.* 1, Thuya nootkatensis; 2, Pseudotsuga Douglasi; 3, Cupressus Lawsoniana; 4, Abies nobilis; 5, Sequoia gigantea; 6, Cryptomeria japonica.—*I. B. S. P.* 1, Prunus Padus (Bird Cherry); 2, Trollius europæus; 3, Veronica gentianoides, variegated form; 4, Helianthemum roseum.—*Salop.* 1, Pulmonaria officinalis; 2, Veronica gentianoides, a variegated form.—*Weed Killer.* 1, Cardamine pratense; Epilobium hirsutum. Yes, many. Epilobium angustifolium is a common garden plant. The common name is the Willow Herb.

Narcissus malformed: *A. L.* Fasciation of the stem, a not uncommon occurrence.

Onions: *A. L. J.* The Onion-smut, Urocystis cepulæ. You can do nothing now but burn the affected plants, and grow the Onions in another place.

Peach: *F. F.* The variety is Condor.

Peach Trees: *T. M.* The injury is caused by Cercospora circumscissa, the Shot-hole fungus. Spray now with rose-coloured Condy's Fluid every fourth day. During next winter, when the plant is resting and before the buds begin to swell, thoroughly drench every part of the house and trees with a solution consisting of 1 lb. of sulphate of iron in 3 gallons of water.

Solanum Commersoni: *H. R., Port Elizabeth.* The following extract from a paper of Mr. J. G. Baker, reported in the *Gardeners' Chronicle*, December 11, 1886, p. 746, will perhaps afford you the information you require: "S. Commersoni is a native of Uruguay, Buenos Ayres, and the Argentine territory, in rocky, arid situations at a low level. It is a dwarfer plant than tuberosum, with small, oblong, obtuse, subequal leaflets and larger flowers, with a corolla always pale lilac and deeply cleft. It has been successfully cultivated in France, but is probably too subtropical in its climatic needs to be adapted for our own country."

Tomato: *D. Y.* You might apply to Mr. J. J. Willis, Hecla Villas, Harpenden.

Communications Received.—Max Leichtlin, Baden-Baden—E. H. W.—The Mayor of Reading—F. Borowski, Bonn—W. G. Sm—E. G. C.—J. H. V.—G. W.—W. H. C.—W. W. P.—Board of Agriculture—E. H. J.—W. S.—G. Reuthe—Rev. D. R. W.—F. J.—A. D.—F. M.—E. M.—Chloris—J. D.—A. H. Pearson—J. O'B.—L. W. F.—J. G. W.—H. C.—A. E. L.—W. B. H.—Swanley Horticultural College—H. E. H. S.—F. C.—A. H. G.—Perplexed—Freak—H. W.—F. K. S.—D. S. T.—C. A.—E. B.—W. B.—A. R. S.

THE
Gardeners' Chronicle
No. 961.—SATURDAY, June 3, 1905.

CONTENTS.

Agaricus, a fasciated	342
Asparagus show at Evesham	345
Books, notices of—	
Country Gentlemen's Estate Book	340
Poisonous Plants	340
Bulb garden, the—	
Late-flowering Tulips	340
Candytuft, a good	340
China, plant collecting in	337
Currant-bud mite, the	341
Frosts and the crops	341
Gooseberry crop, the	341
Holly-berries hanging late in the season	340
Kew Guild, the	344
Meconopsis integrifolia	341
Obituary—	
Arkwright, J. H.	351
Dewar, R. M.	351
Orchids, a sale of	344
Paths, garden	342
Peach-crops, thinning	342
Plants, new and noteworthy—	
Primula Cockburniana	345
Plants, tender, in the south-west	341
Poem, a garden	341
Primula Deorum	340
Primula Veitchii	344
Schizanthus as pot plants	341
Scotch seed, superiority of	341
Societies—	
Royal Botanic	344
Royal Caledonian Horticultural	351
Royal Horticultural Society's show at Temple (see also Supplement pages)	345
Swanley Horticultural College	345
Tomato-leaves with swollen growths	338
Travellers, commercial, in gardens	341
Week's work, the—	
Flower garden, the	343
Fruits under glass	342
Hardy fruit garden	343
Kitchen garden, the	343
Orchid houses, the	343
Plants under glass	342

ILLUSTRATIONS.

Agaricus personatus showing fasciation	342
Begonia "Duchess of Connaught" (p. iv., Supplement)	
Bègonia "Ne Plus Ultra" (p. iii., Supplement)	
Cattleya Schröderæ "The Baron" (p. i., Supplement)	
Ichang, cargo-boats at	337
Iris tingitana	339
Odontoglossum amabile var. Ixion (p. ii., Supplement)	
Primula Veitchii, a new Chinese species (Supplementary Illustration)	
Rose Lady Gay	349
Roses Waltham Bride and Débutante	347
Tomato-leaves with swollen growths	338

LEAVES FROM MY CHINESE NOTE-BOOK.

[*We are privileged to be able to state that Mr. E. H. Wilson will contribute to these columns an account of his wanderings in China—a fitting sequel to the similar articles supplied in former years to this Journal by Robert Fortune, John Gould Veitch, Charles Maries, Augustine Henry, James H. Veitch, and others. Original descriptions and illustrations of several of Mr. Wilson's plants introduced to the nurseries of Messrs. James Veitch & Sons will be given, in addition to those that have already been published.*]

I.—ICHANG.

THIS is a large and important town situated on the Yangtze river, about a thousand miles from its mouth, and near where the mighty river rushes out of the last of the stupendous gorges which have confined it for the last hundred miles. It is therefore right in the very heart of Central China, and practically on the edge of the great plain.

Ichang was opened to foreign trade in 1877. A British and German Consul and a large staff of the Imperial Maritime Customs reside there. Apart from the above, the foreign population consists of missionaries, Protestant and Roman Catholic.

The population is roughly some thirty thousand people. There is little local trade, but being the head of steam navigation it is a most important transhipping port. The six steamers and thousands of native craft attest to its importance as an entry port of trade.

The climate of Ichang is dry, and probably the healthiest on the river. The autumn, winter, and early spring are delightful seasons. The summer is hot, the thermometer often reaching 109° F. in the shade. An up-river breeze during the greater part of the day at all seasons of the year is the salvation of the place. Snow falls occasionally during winter, but seldom lays on the ground for more than two days together. The average rainfall is about 30 inches.

The country immediately around Ichang is broken up into low hills more or less pyramidal in shape. To the east these hills gradually merge into the great plain To the north, south, and west they are mere foothills, up to ranges 5,000 to 10,000 feet in height, these ranges themselves being spurs from the mighty Tibetan and Indian Alps. The rocks around Ichang are principally hard limestone, conglomerate, and a little sandstone. The soil of the fields is a warm, red, adhesive, loamy clay.

Facing the town, on the right bank of the river, is a large pyramidal hill singularly like the Great Pyramid of Egypt, and for this reason it is called the "Pyramid" by foreigners. This hill exerts a baneful influence over the town, and is, or rather was, held responsible for its poverty in local literati. Not until a temple was built on an eminence behind the town sufficiently high to enable it to overlook the Pyramid, was this evil influence counteracted, and the Goddess of Good-luck induced to smile on the town. The very year the temple was completed a student passed the Provincial Examination with high honours. Was not this proof in itself? The temple is richly endowed, and forms a very conspicuous object from all points of approach. I may also mention that a fine pagoda three miles below the town wards off all evil influences from the east.

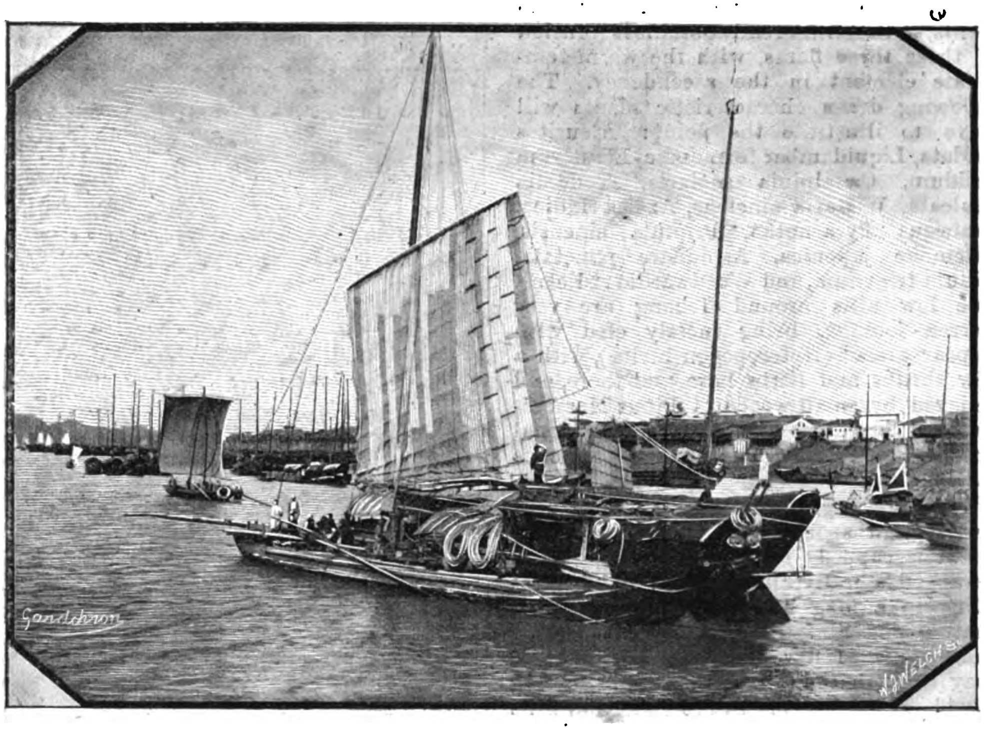


FIG. 138.—CARGO-BOATS AT ICHANG UPWARD-BOUND—THE START.

PLANT-COLLECTORS.

The first person to collect plants at Ichang was Mr. Thomas Watters, who was appointed Acting Consul in April, 1878. This gentleman was the first to discover wild specimens of Primula sinensis. He also first discovered P. obconica, Rehmannia angulata, and Lysimachia crispidens, to mention well-known plants. Watters used to forward his plants to Dr. Hance, who described them in the *Journal of Botany* and elsewhere.

In the spring of 1879 Ichang was visited by the late lamented Charles Maries, who was then collecting for Messrs. Veitch, of Chelsea. This energetic and very successful collector discovered several new plants, including a new genus belonging to Rutaceæ—Psilopeganum sinense. He also introduced from here the now well-known Primula obconica.

To botanists in all parts of the world, and to not a few readers of this journal, Ichang is best known as the first field in which the indefatigable Dr. Augustine Henry laboured. How and why this gentleman prosecuted botanical study and collecting has been told by himself elsewhere. Suffice to note here that he was appointed Medical Officer and Assistant in the Customs Service at Ichang in 1882, and stayed till April, 1889. He began to collect plants in 1885, and despatched his first collection to the Kew authorities in the spring of 1886. This collection proved so interesting and rich in novelties that the authorities wrote to Henry urging him to continue. This he did with the energy and assiduity characteristic of the man. By the time he left he had collected no fewer than 7,948 numbered specimens, representing roughly 2,500 species. According to Mr. Hemsley's estimate (October, 1896), Henry's Ichang plants contain about 500 new species and 25 new genera. These figures speak for themselves. Dr. Henry in his letters frequently urged the desirability of sending out a collector to these parts. In time it chanced that the attention of Messrs. Veitch, of Chelsea, became drawn to the mass of material Henry had collected. The result of this was that they applied to the Director of Kew to nominate a likely collector. I was the fortunate individual selected.

I arrived at Ichang in February, 1900, and made it my base until January, 1902, when

I left for home. From early in May till the middle of September in 1900 things were very unsettled. War, rumours of war, threats, and attempts at local riots gave us an anxious time. All the Protestant missionaries left their posts, and I was only allowed to remain at my own risk. Fortunately no serious outbreak occurred, and eventually things assumed a normal state.

THE FLORA OF ICHANG.

It is my intention here to give a brief sketch of the flora immediately around Ichang, never ascending above 2,000 feet Other notes will deal with the flora of the mountains above this altitude.

The flora of Ichang and the neighbourhood as included in this article is essentially of a warm temperate character, and includes not a few sub-tropical forms. Nevertheless, we find also a number of cool temperate plants, so that what really obtains is a fusion of these three floras, with the warm temperate element in the ascendency. The following dozen characteristic plants will serve to illustrate the point: Aleurites cordata, Liquidambar formosana, Ligustrum lucidum, Cæsalpinia sepiaria, Toddalia aculeata, Wistaria sinensis, Azalea indica, Cratægus Pyracantha, Primula sinensis, Anemone japonica, Aspidistra punctata, Linum trigynum, and Woodwardia radicans. The low hills around Ichang are very barren-looking, being mostly clad with "spear grass" (Heteropogon hirtus), with a few shrubs and herbs here and there, and relieved by small woods of Pinus Massoniana and Cupressus funebris, with occasional groves of the common Bamboo, Phyllostachys mitis.

The "spear grass" is the abomination of the foreign sportsman. One end of the grain is capped with a tuft of barbed hairs arranged spirally, the opposite end terminating in a long flexible awn. The penetrating power of these barbed ends is truly marvellous. I have seen them drill their way through the tongue of a new shooting boot! However, it is not to these low hills that we look for the floral wealth of Ichang, but to the limestone cliffs of the glens and gorges. Here the variety is astonishing, a striking feature being the quantity of well-known flowering shrubs.

The two first shrubs to flower in the early spring are Daphne genkwa and Coriaria nepalensis. It is a thousand pities we cannot succeed with the Daphne in England, since it is such a lovely plant—by far the finest species of the genus. Here, at Ichang, it grows everywhere, on the bare exposed hills, amongst conglomerate rock and lime, stone boulders, on graves, and amongst the stones which are piled around the tiny cultivated plots in the gorge, sometimes in partial shade, but more usually fully exposed to the scorching sun. The plants are, on the average, about 2 feet in height, and are but seldom branched. Imagine the annual suckers from a Plum-tree, and you have the appearance of these Daphne plants. For two-thirds of their height they are so densely clad with flowers that they look like one large thyrse. The colour is lilac, often very dark; but a white form is not uncommon. Its outward resemblance to Lilac leads to its being so called by the foreign residents at Ichang. *E. H. Wilson.*

(To be continued.)

INTUMESCENCE OF TOMATO LEAVES.

SOME little time since some Tomato leaves were sent to me which were more or less curled up, but otherwise appeared healthy and of a dark green colour as of plants in luxuriant growth. On examination, the upper side of the leaves were found to be on the whole normal, whilst the ribs of the under side of the leaves showed on parts a whitish mat, and on other parts a light, rusty-brown, powder-like covering, which easily came off when handled. On the under side of the leaves corresponding to these patches the upper epidermis showed slight "sunken-in" tissues, in no case very pronounced.

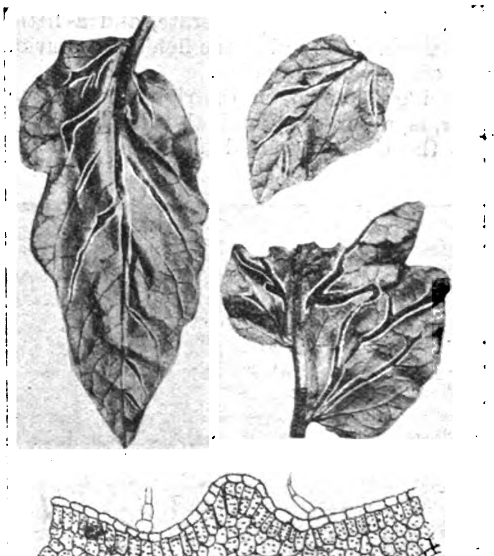


FIG. 139.—INTUMESCENCE OF TOMATO LEAVES.

The accompanying illustration at the top of fig. 139 shows in between the white lines, though not so plainly as in the actual specimens, the seat of the obscure covering. Several microscopical sections were made through the affected parts, but no local irritant, bacteria, or fungus was detected.

In the illustration at the bottom of the figure a section of the affected part is reproduced, and one can, in comparison with the illustration in the centre of the figure (a cut through a normal central rib), easily observe the changes which have taken place in the tissues of the affected leaves. Such changes do not necessarily cause injury to the plant or endanger the crop, provided that no infection by any of the well-known Tomato-leaf fungi takes place. It is a case of swelling of the ribs of the leaves. The mesophyll or central cells of the leaf are much enlarged, and have forced their way through the skin or epidermal cells, as may be seen in the illustration at the bottom of the figure. In some small parts the epidermal cells were still present and uninjured. In those places where the cells had pushed aside the epidermis a whitish covering of the ribs could be observed by the naked eye. In examining the rust-coloured tissues it was found that they consisted of the old broken mesophyll cells, which had burst and dried up. Among other changes in the affected portions one was most pronounced. The chlorophyll grains, or green colouring matter, which in normal cases are distributed uniformly in the cells, had disappeared from the very-much-enlarged cells, whilst in those just enlarging they were found in small groups at the base of the cell. The absence of the chlorophyll accounts for the whitish appearance of the cells. The abnormal character of the leaves showed no very serious injury; on the contrary, the leaves were quite vigorous and full of sap. I believe that the plants so affected will outgrow their injury, and that it need give no rise to anxiety to growers. The leaves should, however, be watched as scores of fungus spores would find in the openings in the leaf suitable places for development, and serious diseases might thus ensue.

In considering the probable causes of such prolific growth of cells the appearance of the leaf on the whole must be taken into account. Though the leaf was curled it showed no signs of limpness, discolouration, or spots. This appearance cannot be regarded as a disease, and the cause must be looked for in another direction. Dr. Masters, in his *Vegetable Teratology*, deals in Book 10, p. 413, with "Deviations from Ordinary Size and Consistence of Organs." And the above abnormal growth may come under the general heading of hypertrophy. Of "hypertrophy" Dr. Masters says, "whatever form it may assume it may be so slight as not perceptibly to interfere with the functions of the part affected, or it may exist to such an extent as to impair the due exercise of its office." Prof. Sorauer, in his work, *Pflanzenkrankheiter*, vol. i., under the heading, "Excess of Water and Nutritive Matter," deals with the development of abnormal cell growth, causing on leaves of various plants grey, corky tissues—true cork-cells, as, for instance, on leaves of Ribes grossularia. In the Tomato, however, the outgrowth of cells does not assume a corky character, but remains soft and delicate. This careful investigator separates from the development of cork-cells what he terms "intumescentia," and from his description of such cases I feel justified in speaking of "intumescence" of Tomato leaves. Professor Sorauer refers to the frequency of such "intumescences" on Cassia tomentosa. The young leaves did not straighten themselves as in normal conditions, and distinct swellings of the central leaf-rib could be detected. On microscopic examination he found abnormal elongations of the cells beneath the epidermis, which in portions had burst through it. At the same time he observed the position of the chlorophyll in such cells, and states that most of the chlorophyll bodies are found at the base of the cells still *in situ*, slightly yellowish, and somewhat eaten away. The same appearance is found not at all infrequently on the leaves of Vines in houses. Excess of moisture and heat have been found to favour and produce the development of warts on Vines, and no doubt the same conditions are responsible for the occurrence in the Tomato-leaves. Over-

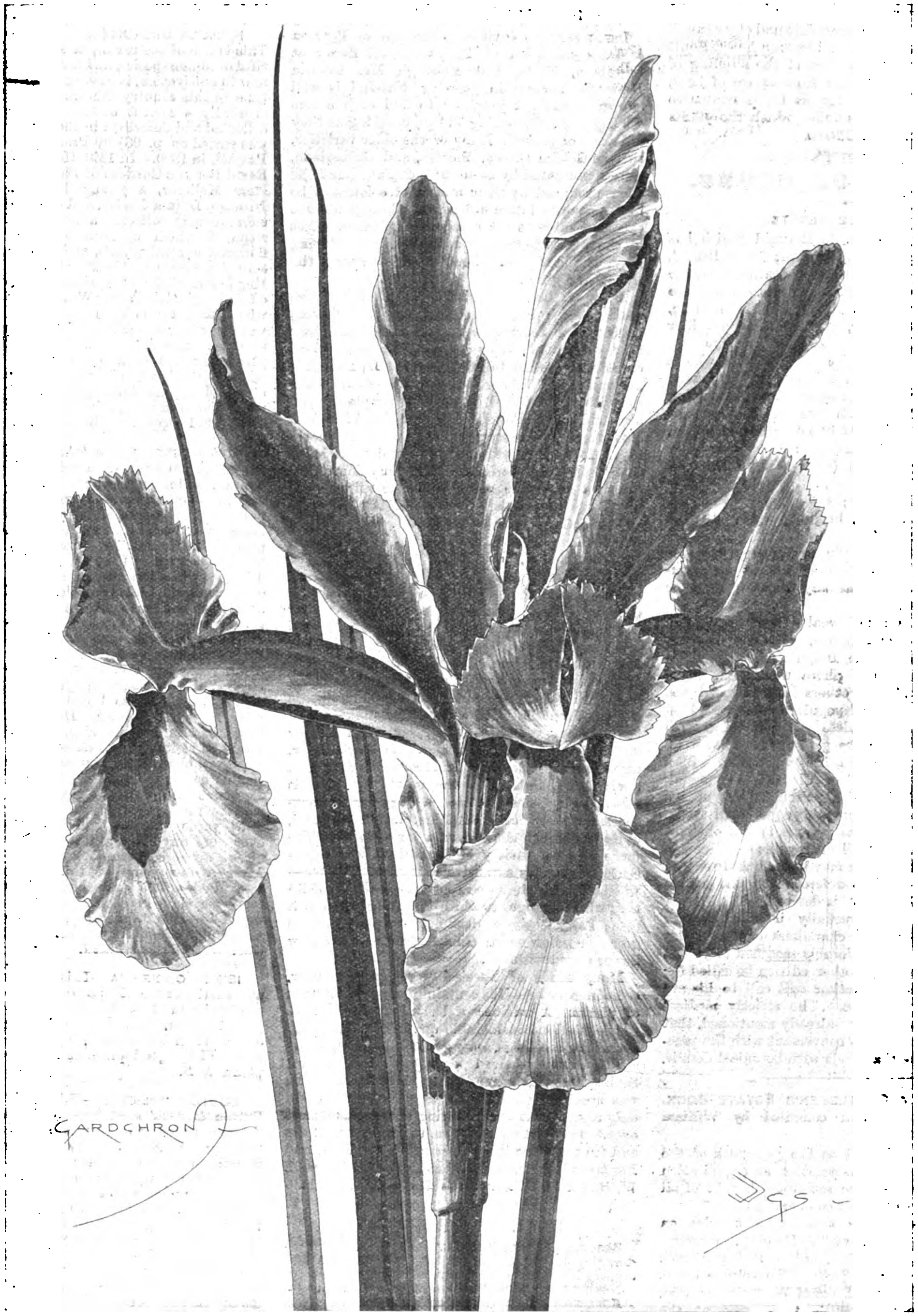


FIG. 140.—IRIS TINGITANA, A SOMEWHAT SHY-BLOOMING TANGERIAN SPECIES: COLOUR OF FLOWERS LILAC-PURPLE.

From a Drawing made from specimens which flowered in April in the Royal Horticultural Society's Gardens at Wisley.

manured Potatos often show similarly curled leaves, and no local irritant has been detected, though in many cases the affected portions were afterwards inhabited by parasitic and other fungi. From this explanation it will be seen how difficult it is to determine the causes of the swelling of the Tomato-leaves, whether from excess of heat, water, or nutritious matter, as I was unable to ascertain the conditions under which the plants had been grown. *Hans Güssow.*

NOTICES OF BOOKS.

Poisonous Plants.

Under this title Mr. A. Bernard Smith has compiled, and Messrs. J. Wright & Co., of Bristol, have published a small treatise dealing with the poisonous plants of all countries. They are arranged according as they act on the brain, spinal cord, heart, liver, and intestinal canal, or as simple irritants. The book conveys the impression that it is the work of one who is personally familiar with only certain portions of his subject. Whilst the symptoms of poisoning and the medical details are satisfactory, the botanical information is by no means complete; for instance, we find this entry :—

"Solanum tuberosum (cultivated in Britain), common Potato. Solanaceæ. A tuber; stem herbaceous; leaflets, ovate; flowers, in racemes, 1 f. ann., June to August, bright purple; stamens yellow, fruit green."

This is misleading, as the tubers are not, under ordinary conditions, poisonous, and it is inaccurate and incomplete, as any Potato-grower or botanist will see.

The misprints also reveal a want of care in proof-reading; for instance, we have "Scopala atrapoides, Umbellijeræ, Delphinium consolidata, Cystisus Laburnum, Saphora tomentosa, Gosophila struthium," and others that we need not mention. A number of popular names are added which are mostly obsolete and not in general use. No indications are given as to what parts of the several plants are poisonous. Why "Narcissus Johnstoni," or Clematis Jackmanni, should be picked out as poisonous out of the hundreds of varieties, probably equally poisonous, but happily not used as poisons, is not obvious. It is new to us that "oil of bay" is contained in Asarum europæum. It may be so, but we should have been glad of a reference to the source whence this information is derived.

Erysimum is not usually included among Fumariaceæ, and the characters of that order would have to be considerably modified to permit of its inclusion. If another edition be called for it is to be hoped the author will call to his aid some friendly botanist. The strictly medical details show, as we have already mentioned, that the writer is more fully conversant with the practice of medicine than he is with botanical details.

The Country Gentlemen's Estate Book. 1905. Edited and compiled by William Broomhall.

This may be looked as the year-book of the Country Gentlemen's Association, an organisation which has its object the reciprocal benefit of all its members by means of co-operation.

The work comprises a series of articles on estate management, work, farming, forestry, gardening, fruit-growing, sports and pastimes, and various other subjects. The volume opens with a portrait of the Duke of Westminster, who, it will be remembered, is to preside at the forthcoming dinner of the Gardeners' Royal Benevolent Institution.

The book is full of information of value to country gentlemen and their agents, and may be had from the Country Gentlemen's Association, 2, Waterloo Place, Pall Mall, London.

BULB GARDEN.

LATE-FLOWERING TULIPS.

I was recently invited to see Messrs. Pearson & Son's collection of Tulips in full flower at Lowdham, Notts, and although Mr. Duncan Pearson's success in growing Narcissi is well known, I was not prepared to find such a fine display of late-flowering Tulips, covering as they did acres of ground. Many of the older varieties, such as Golden Crown, Picotee, and Gesneriana, were represented by thousands of plants, and the effect produced by their masses of colour can be better imagined than described. These plants are excellent subjects for producing a pleasing effect in the pleasure-grounds and shrubberies during May, if planted in large breadths among the shrubs and grass.

A few of the best and most distinct varieties noticed were: Loveliness, a fine rosy-pink flower; Inglescombe Scarlet—a large stock of this new kind was noted; it has a paler shade of colour outside, and is not tall in growth. La Panachée has variegated foliage, and the flowers are dark-red with white stripes, a nice thing for planting on a groundwork of Forget-me-Not or blue Aubrietia; Buonoventura has scarlet flowers with gold markings. It has a larger flower and is of dwarfer habit than Gala Beauty, which has similar colours, and is also a handsome variety; La Merveille has a fine large flower that is not stiff, the colour is salmon suffused with a purple tint. Others were Purple King, of a distinct purple colour; Glow, very bright red, one of the best; Donders, a fine large dark vermillion flower; Phyllis having white petals shaded with heliotrope, a very delicate colour; Margaret, a large flower, of blush colour, is very pleasing; Parisian Yellow and Mrs. Moon are two good pale yellow varieties, with long pointed petals; Striped Beauty has a large, well-shaped flower, the colour being pink with a darker-coloured stripe; Clara Butt is a magnificent Tulip, in colour clear pink—one of the very best varieties; Van Poortvliet, in colour dark rose; Pride of Haarlem, a fine large flower, also dark-rose-coloured; Mr. Farncombe Saunders, a vivid red, and one of the best Tulips of this colour; Sir Thos. Lipton, a very large dark-scarlet flower; and Vitellina, lemon coloured, quite a distinct shade, and a large flower. The large crimson variety of Gesneriana was represented by a very extensive collection. Picotee—when first open, the flowers possess a greenish-white tint, which changes to white delicately edged with rose; Fairy Queen is dark heliotrope with a pale greenish-yellow edge; Golden Crown is a yellow flower edged with red.

Many kinds of Narcissi were growing near, some in large breadths containing many thousands of plants. A number of the newer kinds were represented in considerable quantities, also many promising seedlings, among which Florence Pearson (which received a Royal Horticultural Society's award some two or three years since) was specially strong and vigorous; one could only regret that the flowering season was almost over. Time did not allow me to inspect the Roses and fruit trees on this occasion, but pot Vines and Fig trees in pots, under glass, were looking well. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

PLANT PORTRAITS.

Begonia Triomphe des Belvederes.—*Revue Horticole*, May 1. Of the semperflorens section, with dark coppery leaves and bright scarlet flowers.

Nerine Bowdeni.—*Flora and Sylva*, May.

Rosa moschata nivea.—*Garden*, April 29.

Pelargonium Lady Mary Fox.—*Flora and Sylva*, May.

Rose Schneewittchen (polyantha). — *Rosenzeitung*, March, 1905.

Rose Madame Jean Dupuy (T.). — *Rosenzeitung*, March.

Nepenthes Vallieræ ×; N. Deslogesii ×.—*Le Jardin*, May 5.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

PRIMULA DEORUM (see illustration on p. 98).—This is one of the rarest, most distinct, and beautiful of alpine species, and has been said to be quite new to cultivation, it having flowered for the first time in this country this spring. This, however, is hardly a correct statement. The plant was collected and described in the *Bulgarian Flora* (as was stated on p. 98) by Professor Velonovsky, of Prague, in 1890. In 1891 Herr Max Kolb, of the Royal Botanic Gardens of Munich (Bavaria), sent Herr Kellerer, a young botanist, to find P. Deorum, Lilium Jankæ, and other plants, and he subsequently collected a number of P. Deorum, some of which came into my possession. I flowered several plants, and some of these were shown in flower at the Royal Botanic and Royal Horticultural Society's shows, and were sold and offered by Mr. T. S. Ware, Tottenham, with whose firm I was then connected. The plants were however quickly sold, and I have been able to trace some of them which are alive, thus the plant has not been quite out of cultivation, when all the hardy plant nurseries in this county obtained a plentiful supply this year, although these plants were nothing like the fine specimens of the 1891 supply. *G. Reuthe, Keston, Kent.*

HOLLY-BERRIES.—In "Answers to Correspondents," p. 320, there is a notice of Holly-berries hanging so long upon the trees. I have a similar experience on a tree in my grounds here, but the portion of the tree on which those berries now hang is unhealthy. The other portion of the tree which is healthy, bore berries plentifully, but they were all eaten by birds long ago. A tree on the opposite side of the road, but on other property, is also crowded with berries which birds have not touched. On close examination of this tree, I find it is also in an unhealthy condition, the berries, presumably, not being sufficiently luscious to tempt the birds to eat them. A few years ago I was living close to a couple of large White Beam-trees (Pyrus Aria), which bore every year, as far as I can remember, a crop of their large, red berries. During autumn, when these berries became ripe, one of those trees would be visited by a flock of birds, consisting of thrushes, blackbirds, jays, and even rooks. These would continue their visits daily until the tree was completely stripped of its fruit; whilst the other tree, which was only a few yards away, had no visitor whatever of any kind; its berries, so far as birds were concerned, remaining untouched. After a few years of this sort of thing the tree died. The tree having been evidently for some time in declining health, the berries would be without juice, and this the birds, being good judges, found in the berries of the healthy tree. *W. Miller, Berkswell.*

IBERIS CORIFOLIA.—It is difficult to beat this perennial Candytuft as a white-flowering plant in the border in May. Compact in growth and very free of bloom, the well-formed flowers admirably displayed on bold trusses, hardy and easily grown, it has all the good qualities of a first-class hardy plant. *R. D.*

SCOTCH "NEEPS."—When visiting Messrs. Sutton & Sons' seed farm at Reading recently, I was taken to inspect a batch of Swede Turnips in flower. Very unexpectedly, these plants furnished further illustration of the remarkable superiority in respect of robustness and productiveness of Scotch-grown roots over English-grown ones. We have become quite familiar with this fact in relation to Potatos, a matter that so far has not yet had a satisfactory elucidation. We know it is so, and that is all. Now there are planted on the Reading seed farm a large number of Scotch-grown roots of the Swede Sutton's Magnum Bonum, and these have sent up strong growths fully 7 feet in height and now a mass of bloom. Close beside are two rows of the same variety, the roots of which were obtained from Oxfordshire, yet were apparently in all respects equal to those procured from Scotland. They were all planted at the same time, and on soil equally treated. Yet the growth on the Oxford roots is far less robust, ranging from 4 to 5 feet in height only, and certainly the seed produce per root will not be one-half that furnished by the Scotch roots. Here is presented, as with the Potatos, an interesting problem for the Scientific Committee of the Royal Horticultural Society to enquire into, and possibly solve. It need hardly be said that henceforth for the securing of a primary seed stock, as is done every year, the firm will henceforth secure roots of Scotch growth only. The ultimate seed-producers are seedling plants raised from the primary root-seed stock planted out in the spring. *Alex. Dean.*

ARE COMMERCIAL TRAVELLERS A NUISANCE?—As one of these, I should like to say a word or two. If gardeners only knew how they delay the poor, abused traveller by either letting him wait hours before they will see him, or listening to their conversation whilst they discourse about their products for as long as one likes to stand, they might get a glimpse of how impossible it is for them to keep the appointments per their advice cards. As to being "shown round," for one commercial traveller who wishes to be there are ninety-and-nine who, if their expenses would allow it, would willingly give each gardener five shillings for himself not to do so. As an example, I was at a large garden one night making the last of my calls in that district. I had an hour to spare with the gardener and then had to catch a local train which would bring me home by 8.30, not allowing time for tea (dinner at 12 noon). He was an affable man, and as I thought from his conversation there might be a chance of an order, I humoured him a bit and allowed him to "show me round." This, as he had had his tea, took two hours and a half, and in the end I was plainly told he could have no chance of doing business with me. He hastily bid me good-night, and left me with eight miles to tramp without food to the nearest city where I could just catch the last mail to my destination. This, I feel sure, must in a greater or less degree be the experience of horticultural travellers who have to humour gardeners with absolutely no business ideas at all. Speaking for myself, I can no more undertake a journey with a chance of being punctual in my appointments than I can change the tides, all through the mistaken idea of courtesy (save the mark!) of "like to have a look round." Is the traveller who wasted his time by allowing the foreman, from whom he could not get any orders, to "show him round" still at large, and where? *"Our Mr. (the Traveller.)"*

—— I fail to see that these gentlemen are a nuisance, even should they be a day behind their appointed time in calling, and unless "A Foreman" was instructed from the head gardener to show them round if he were absent when they came, I consider he was exceeding his duty and wasting valuable time, as my experience is that not one in a dozen travellers care to spare the time, and I am within the mark in saying that during the fourteen years I have been here I have only shown two through the gardens. *J. Mayne, Bicton, Devonshire.*

MECONOPSIS INTEGRIFOLIA.—Since writing my note on Meconopsis integrifolia, wherein it was stated that M. grandis had failed to produce seeds with us, I have ascertained that a batch of young seedlings now making nice growth are from home-saved seeds, and not from imported seed, as I had thought. *E. H. (The Co-operative Bees, Ltd.).*

—— This plant is now in bloom in the rock garden here. It is very distinct in character, bearing numerous large sulphur-coloured, Papaver-like flowers, that are very pleasing and attractive. Individual plants are very conspicuous, and the effect produced by a mass of it must, I feel certain, be very charming. *T. Challis, Wilton House, May* 25.

SCHIZANTHUS AS POT PLANTS.—More striking evidence of the great amount of bloom and beauty that can be obtained from pot plants raised in a few months from seed could hardly have been found anywhere than I had the pleasure of seeing in the conservatory at Sherfield Manor, near Basingstoke, the residence of J. B. Taylor, Esq., a few days since. The plants were in 6-inch pots, and from the Reading strains of Schizanthus pinnatus and S. retusus, were in height varying from 20 to 30 inches, charmingly varied in colour, and making undoubtedly a most beautiful display. To have well-grown specimen plants singly, it is well to sow three or four seeds in each of numerous small pots early in September, thinning the seedlings down to one later, then as growth ensues shifting into 6-inch pots, using good loam, and potting firmly. If the plants draw a little, as is inevitable, they are more decorative than are those of too compact a habit. Many very costly plants would fail to produce the charming display these annuals did. *A. D.*

LINES FROM SCOTTISH POETS.—A correspondent at p. 317 wishes to know from what Scottish poet the following lines are taken:—

> "Give me the garden wild and wide
> Where thorns and thistles side by side," &c.

From no Scottish or any other poet were these lines taken. They exist only in the correspondent's imagination. Allan Ramsay, a Scottish poet, who wrote perhaps the finest pastoral drama that ever was written, "The Gentle Shepherd," wrote some lines on a garden from which the above stupid couplet may have been evolved. They show Ramsay's contempt for the stated rules of such garden art as existed at the time. Allan was born in 1686, and must have known of the formal gardening introduced by the Prince of Orange into England, as he corresponded with Gay and Somerville. The following picturesque sketch reminds one of the late Mr. George F. Wilson's ever-to-be-remembered garden at Wisley:—

> "I love the garden wild and wide
> Where Oaks have Plum-trees side by side;
> Where Woodbines and the twisting Vine
> Clip round the Pear-tree and the Pine;
> Where mixed Jonquils and Gowans grow,
> And Roses 'mid rank Clover blow
> Upon a bank of a clear strand,
> In wimplings led by Nature's hand,
> Though Docks and Brambles here and there
> May sometimes cheat the gardener's care.
> Yet this to me's a Paradise
> Compared with prim cut plots and nice,
> Where Nature has to art resigned,
> Till all looks mean, stiff, and confined."

Your correspondent is evidently trying his hand at a poor joke at the expense of Scotsmen, although only a donkey would appreciate his couplet. *J. Douglas.*

FROST AND THE CROPS.—Growers in the Vale of Evesham have incurred heavy losses by the frosts of last week, and it is seldom that such general injury to fruits and vegetables has been experienced. Some damage was done on the morning of May 22, but it was on May 23 that the worst results followed a temperature which fell from 6° to 9° below the freezing-point. The crops in the lower parts of the slopes and banks of the river Avon have suffered the most severely, and it is only upon the higher land, such as Greenhill, that there has been any general escape from injury. Amongst fruits, the worst effects have been felt by Plums, Pears, Cherries, Black Currants, and Strawberries, which in some cases have lost all their flowers or fruits, and in all have been heavily damaged. A few Pershore Plums have been left on the high lands, and Czar seems to have escaped to some extent in similar situations, but Victorias and Rivers' Early Prolific have suffered terribly. Amongst vegetables, early Potatos, Runner Beans, and Peas have been generally injured, though Asparagus has escaped in most places with little damage. Tomato-plants that were put out early have been killed in thousands, and Vegetable Marrows insufficiently protected have also been caught by the frost. With a few exceptions, Red Currants, Raspberries, and Gooseberries have escaped fairly well. The long period of keen easterly winds and the extraordinary drought (up to May 28, no fewer than twenty-five consecutive days without rain) have combined to increase the growers' difficulties enormously, and the numerous industrious and usually successful small holders in this beautiful district will need all their energy this season. *R. Lewis Castle, Evesham, May* 28, 1905.

EFFECTS OF THE NORTH-EAST WINDS ON GOOSEBERRIES.—I notice that on the side of the trees exposed to the action of these cold winds, the sides of the fruit exposed to the north is of quite a ruddy colour, as if prematurely ripening. This remark applies to trees on my Primrose nursery at Hounslow, but I am informed that it is general in the district in the cases of trees exposed to the winds. The fruits look as if they were half paralysed. I am afraid there is much room for concern as to the promise of the fruit generally, owing to the persistence of the drought and the dry, cold atmosphere. Apples appear to be affected by blight, the young leaves curling at the points, as if injured by the cold. *R. D.*

TENDER PLANTS IN THE SOUTH-WEST.—When I wrote, in my note on Messrs. Treseder's nursery at Truro, p. 285, of certain plants being only hardy in the open in the south-west, I should, as pointed out by Mr. T. Ryan, p. 315, have made an exception in the case of Ireland. At the time of writing, however, I had only England in my mind. I know that in Ireland, especially in gardens I have visited in the south, tender shrubs grow as freely in the open as they do in Cornwall and South Devon; and a perusal of Lord Annesley's finely-illustrated book on the collection of choice trees and shrubs at Castlewellan, to which Mr. Ryan alludes, convinced me two years ago that in those far more northerly gardens subtropical subjects found a congenial home. I trust that some day I may be able to avail myself of Mr. Ryan's kind offer to show me the rare plants under his charge. *S. W. Fitzherbert.*

THE BLACK CURRANT BUD-MITE. — Your correspondent Mr. A. O. Walker, p. 316, evidently attaches more importance to a crop of fruit than to ridding his trees from the mite—a view which would not commend itself to everyone; but even so I fail to see how spraying the trees during the months of May and June, with a mixture such as recommended, would in any way injure the crop of fruit. As a matter of fact the trees we experimented upon in 1903 and 1904 bore splendid crops of fine fruit which were in no way affected by the spraying. Since writing to you last year I have received a copy of an interesting report upon this mite by Mr. Walter E. Collinge, M.Sc., Lecturer in Zoology, &c., in the University of Birmingham, from which I copy the following extract: "In 1901 some small bushes which were very badly infested were treated with the following spray-fluid twice a week during the migration season: Sulphur, 2 lb.; soft-soap, 25 lb.; water, 50 gallons, made as follows; Mix the sulphur to a gruel with water; the soft-soap should be mixed with 5 gallons of boiling water; then add the two mixtures together and mix well, after which add slowly sufficient water to make 50 gallons. The results obtained from the use of this spray-fluid are very encouraging. The new buds which came out in 1901 were very carefully examined until nearly the end of the year, and on only one bush were mites found, and only very few, the actual numbers in the different buds examined in August, 1901, were: 12, 3, 7, 5, 3, 3, 12, 3, 7, 7, 6, 5, 3, 12. In 1902 these same bushes were under constant observation, but no mites were seen or any indications of them. As these bushes were growing not far from some infested bushes, they were sprayed during the migration season as in the previous year. In 1903 they still remained free from mites, and an examination of almost every bud on one particular tree at the beginning of 1904 failed to discover either mites or eggs, and all the trees were free of abnormal buds. *Natural Enemies.*—In addition to those already mentioned, reference must be made to the larva of the lady-bird beetle (Coccinella septempunctata, *L*). During 1902 and 1903 I had a series of badly infested cuttings under observation, and these were practically all cured by keeping them artificially supplied with this beetle. The 1902 cuttings exhibited very few, and only slightly abnormal buds in the autumn, while in 1903 they seemed entirely free. Unfortunately this species of ladybird does not seem particularly fond of the Black Currant, but, in my own mind, I have little doubt but that a species could be found which, if bred in sufficient number, would materially lessen and keep in check this disease.

and possibly might exterminate it." It will be seen that the quantity of soft-soap recommended by Mr. Collinge is four times that mentioned in my previous letter, and he does not say that the foliage was injured, although I should have expected it to be so with this heavy application of soap. I must apologise for troubling you at such length, but I attach more importance to this question than to the loss of a year's crop of fruit, indeed I think the gravity of this matter can scarcely be over-estimated. *A. H. Pearson, Lowdham.*

THINNING PEACH CROPS.—The vigour and size of each tree must be considered in determining the number of fruits which it shall carry as a crop without in any way impairing its permanent welfare. The thinning out of the fruit is generally done at the same time as the last stage of disbudding is being completed, and, like that operation, it is advisable to extend the process of thinning the crop over a week, finally thinning out the fruit to a distance of from 9 to 12 inches apart every way on the trellis, wall, or fence, retaining, as a matter of course, the most even-sized and best-placed fruits on the face of trees growing against walls and on the upper surface (glass side) of trees growing under glass to form the crop. Many growers defer the final thinning of the fruits until they have completed the process of stoning, being afraid to do so before, in case some of the fruit left to constitute the crop should fall off in the progress of stoning. As a matter of fact, this cautious method of procedure is well calculated to bring about the very thing (dropping of the fruit) it is meant to prevent, seeing that the energies of the trees are needlessly and severely taxed in the stoning of a crop of fruit 50 if not 100 per cent. of which the cultivator intends picking off the trees when the process of stoning is completed, unmindful of the fact that his misapplied caution in this direction tends directly to the wasting of the tree's forces instead of directing them into the proper channels for securing the swelling of the crop and the due development of the tree, wood and foliage. In short, there is no fear of strong, free-growing, healthy Peach trees casting their fruit in the process of stoning when cropped as recommended above, and when the cultural details are properly attended to in the way of keeping the soil about the roots uniformly moist and the foliage clean. In the case of trees there is all the more necessity for reducing the number of fruit to 12 to 15 inches from fruit to fruit every way before the stoning stage is reached. Avoid over-cropping the trees as the greatest evil in fruit-culture. Always bear in mind that a dozen well-grown Peaches or Nectarines are preferable in every respect to three times that number of fruits of a like weight in the aggregate. Weakly-growing trees should be cropped very lightly, and the fruit, as in the case of robust-growing trees, should be thinned out to the distances recommended above before the stoning stage is reached, so as to enable them to swell decent-sized fruits, and at the same time make stronger wood for yielding fruit the following year. In thinning the Nectarine crops it must be borne in mind that the individual fruits of the Nectarines do not attain to such large dimensions as the Peaches do under the same conditions of treatment. The fruits should therefore be left closer together on the trees—say at from 6 to 9 inches apart every way—although where extra-fine fruit is desired, 12 inches from fruit to fruit will be none too much space to afford such varieties as Early Rivers, Dryden, Spenser, Newton, Milton, Pine-Apple and Humboldt. With good cultivation and generous treatment at the roots these varieties will yield fruit of grand size and appearance and fine in flavour. The foregoing remarks may be as useful to young fruit-growers and amateurs as they are opportune in the case of Peaches growing out-of-doors, which now require attention in the direction indicated above. *H. W. Ward, Rayleigh, May* 13.

GARDEN-PATHS.—My attention has just been called to Mr. Molyneux's letter on my article on "Garden-paths" in your issue of April 15. I do not think he has read it very carefully. I certainly never advocated asphalt for carriage roads, but only for paths in the kitchen-garden and back premises, where I prefer it to gravel, owing to its being easier to keep clean and tidy. Gravel requires constant raking and rolling; asphalt merely a brush over with a broom. Further, if prepared with cold tar, as I suggest, the paths do not smell in hot weather. I am particular, too, to state that in these paths there is no need to excavate so deeply for cart-tracks; 2 feet is generally ample; 18 inches the usual depth. Even for a cart-road it is only in very bad soil that 4 feet is often required, and if Mr. Molyneux will refer to my article he will see I specify stones, rubble, or clinkers for a foundation, and granite, flint, or slag as a surface, and I supposed people would choose which was cheapest. In Scotland I could get any amount of unbroken granite on the spot, and the men broke it during the winter, when they could do nothing else; or I could get it from the estate stone-mill broken to pass through a 2-inch sieve at 1s. 6d. per ton. In Lincolnshire broken Belgian stone costs 6s. 6d. per ton; iron slag, also broken, 2s. 6d., and flints picked from the land, 2s. 6d., and an extra 1s. 6d. to break. Certainly I never advocated filling a 4-feet cut with granite at 18s. per ton! *J. S. Turnor, May* 27.

FASCIATION IN AGARICUS.

In April I found growing at Studley, on a bed of leaf-mould, a large number of Agaricus (Tricholoma) personatus, which were gathered and eaten.

The interesting point about these specimens is that they exhibit in a striking way an appearance similar to what is called fasciation in phanerogams. Many of them showed it some degree, but the most conspicuous was the one of which a sketch is appended. Fig. 141 (A) is a broadside view, and fig. 141 (B) a section at right angles to A through the dotted line.

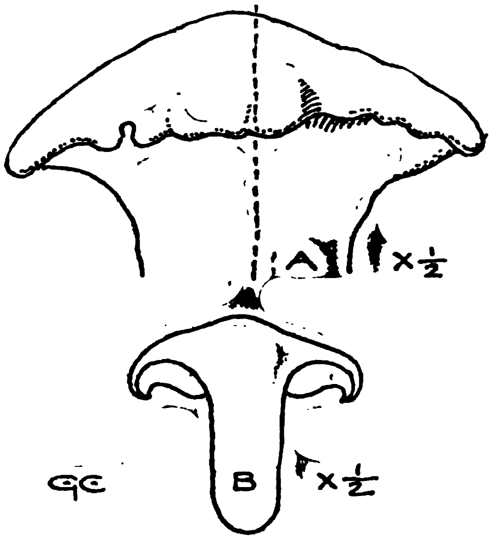


FIG. 141.—FASCIATED SPECIMEN OF AGARICUS PERSONATUS.

The stipes measured nearly 6 inches across where it joined the gills, by ¼ of an inch at its greatest thickness, the fungus being about 3 inches high. There was nothing in the substratum on which it was growing to account for this flattening. It was not caused like the flattening which is sometimes seen in Agarics growing between the joints of bricks, nor like the compressed stems seen in Agaricus confluens. The leaf-mould was loose and friable, and the fungi grew two or at most three together, and were not at all crowded. I have occasionally noticed the same thing in other Agaricini, such as Russula, but never in so marked a degree. *W. B. Grove, Birmingham.*

The Week's Work.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBETT, Impney Hall Gardens, Droitwich.

The Orchard-house.—The latest varieties of Peach and Nectarine-trees in pots will now be swelling their fruits, therefore afford them liberal supplies of water. If the pots are plunged, they should be placed on bricks in order that the water may pass away more quickly. Top-dress the roots as previously recommended, and apply other stimulants to those trees that require them until the fruits show signs of ripening, when such feeding should be discontinued, and clear water applied exclusively. Thoroughly syringe the trees every morning and afternoon in bright weather, and ventilate the house freely, always admitting a little air at night. Respecting early varieties, the fruits of which are ripe, let the borders be damped well under the trees, and the atmosphere kept cool by liberal ventilation. Any trees from which the fruit has been gathered, and which have been for a period in a cool-house, may be removed out-of-doors during this month, plunging the pots in an exposed position, and putting a few rough ashes under each pot to facilitate drainage. Syringe the trees daily, and give them liberal supplies of water at the root, and supply liquid-manure to trees that require it.

Pears and Apples.—These trees should be examined at least twice daily for water, for it is important that they should not become dry at the roots. Trees which are carrying heavy crops of fruit may be top-dressed with rough pieces of loam, horse-droppings, and bone-meal. Clear soot-water and diluted liquid-manure may be applied as may seem desirable. Thin out the fruits where they are too numerous, and pinch the shoots. Admit fresh air by day and night, and keep the trees clean from red-spider by syringing them and damping the surfaces in the houses. Any varieties that are not required to ripen inside may be removed out-of-doors, and the pots plunged in the earth.

Plums.—Continue to pinch the shoots as this operation becomes necessary, and apply nourishment freely, as no kind of fruit-tree repays better for liberal treatment or is capable of maturing heavier crops of fruits. Syringe the trees until the fruits are ripe, and when they have been gathered plunge the trees out-of-doors and treat them as previously advised for Peach trees.

Cherries.—In order to keep these fruits in good condition for as long a period as possible, protection from birds will be necessary, and shade from bright sunshine should be provided, unless the foliage is abundant. Such shading should be removed when there is no direct sunshine upon the glass. Do not allow the trees to suffer from want of water at the roots. Ventilate the house freely and damp all available spaces twice daily to keep the fruits fresh in appearance. Later kinds will now be making rapid progress, and an endeavour should be made to keep the foliage clean previous to the fruits changing colour, but be careful not to employ too much moisture or the fruits will split, especially those of Bigarreau.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq. Copped Hall, Epping, Essex.

Ixoras.—Considerable heat and moisture are very essential for these plants, and very little air should be admitted to the structure containing them at any season of the year. During the summer months moderately-heavy shading should be employed. A suitable compost for the rooting medium is one containing peat and loam in equal proportions, with silver-sand and charcoal liberally added, and the whole well mixed together. If the plants are kept free of mealy-bug little trouble need be experienced in growing them perfectly under the conditions described above. If cuttings are inserted at the present time in thumb-pots they will make roots easily, if the pots containing them are plunged in Cocoanut-fibre in a frame where considerable bottom-heat can be employed. From such cuttings nice plants can be raised before the dull days set in. The four following varieties in the order given I find to be most useful:—I. Duffi, I. Williamsi, I. Westi, I. Fraseri. I. Duffi is inclined to a straggling habit, but the gorgeous trusses of flower this variety produces renders this habit a characteristic feature.

Tabernæmontana coronaria fl.-pl.—This is a useful and effective plant, requiring the same treatment as for Ixoras. By pinching out the side-shoots from a leading growth nice standards may be obtained.

Posoqueria longiflora and *P. multiflora* are, apart from their delightful fragrance when in flower, suitable for growing-on as specimens; and where room can be afforded for growing them in this manner every encouragement should be given them. Heat and moisture during their period of growth are very necessary, after which they should be rested in a slightly lower temperature. Cuttings may be inserted simply in pots and placed in the propagating frame or preferably under a bell-glass to make roots. They are very liable to damp off before rooting unless the lights are allowed to remain open each morning for an hour in order that excessive moisture may escape.

Gardenias.—As these plants pass out of flower let them be thoroughly cleansed, then cut them back moderately hard if they are intended for growing on, re-potting or top-dressing them according to requirements. If merely a top-dressing is employed apply a dressing of bone-meal before adding the fresh soil.

THE ORCHID HOUSES.

By W. H. Young, Orchid Grower to Sir Frederick Wigan, Bart., Clare Lawn, East Sheen, S.W.

Cattleya Aclandiæ. — An importation of this dwarf-growing species has recently been distributed. For a week or more after receipt protect the plants from strong light by covering them with a sheet of paper or other suitable material, and do not wet them in any way. New roots will soon appear, and before these attain much length the plants should be set in order for their growing season. Their habit generally precludes ordinary pot-culture, but many of the smaller pieces may be fixed in shallow pans that have been almost filled with drainage material, and a very shallow surfacing provided consisting of peat and sphagnum-moss in equal parts. In order to make the plants secure and firm, tie them down with fine copper-wire or tarred twine, and in a similar manner pieces that cannot be placed in pans may be secured to teak-wood rafts, with a small quantity of rooting material intervening. The pans and rafts should then be suspended near to the roof-glass in the warmest part of a Cattleya-house. On bright days they should be taken down and be sprayed around, but partial dryness of the materials should be permitted until growth and root-action is free. When the plants have become established and are growing well they may be dipped frequently, but after growth has again ceased atmospheric moisture will almost suffice to keep them in proper condition without root waterings. It is most essential never to have sour or stale materials about the roots of these plants. A characteristic of this species is that growths which have extended over the sides of the pans flower most satisfactorily.

Cattleya Schilleriana is by many regarded as a natural hybrid between the above-mentioned species and C. guttata. It requires the same treatment so far as position, the giving of water, and other particulars are concerned. It should be grown on rafts or in shallow pans. The plants having flowered, or arrived at the stage when they should have done so, they will soon produce a new series of roots from the bases of the new growths. It will be then advisable to pick out as much of the old material as possible, and replace it with new, afterwards keeping the material moist until root action has ceased. Subsequently throughout the resting period comparatively dry conditions should be the rule.

Cattleya superba, although distributed over a large area in equatorial South America, is always found growing on trees near to rivers, where the plants are well exposed to the light and deluged daily for six months of the year. In cultivation the plants succeed for a few seasons fixed in well-drained pans with a small quantity of material about the roots, and suspended in the highest and warmest part of the East Indian-house. When they are growing, but are not making roots, they need very little water, but as soon as root-action occurs afford them liberal and frequent supplies. During the long resting period waterings should be very infrequent. Afford new material just prior to new roots appearing. Thrips and scale would trouble these plants if the pest were not destroyed by the usual methods.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Celery.—We have made our first plantation of Celery from sturdy, well-hardened plants raised from seeds sown during the second week in March. Having prepared the trenches, give them a thorough watering the day before the seedlings are planted. In transplanting these slender, fibrous-rooted plants the greatest care must be exercised in order to avoid giving them a check. Plant moderately firmly, and apply water to ensure a quick and free growth. During the season give frequent applications of soot, and until growth is completed plenty of water. Damp the plants overhead at least once a day during dry weather. Make preparation for successional breadths.

Vegetable Marrows.—These plants should now be sufficiently hardened for planting in their permanent quarters. Being trailing plants, they are usually grown upon manure or rubbish-heaps, but a well-regulated bed in a good position may with advantage be given them. It will still be necessary to place either light frames or hand-lights over the plants at night-time. On the 22nd ult. we registered 7° of frost, and on the 23rd 9° on one glass and 11° on another, with 17° on the grass. Apples, Pears, Plums, Gooseberries, Strawberries, &c., all suffered severely from this cold snap.

Thinning Seedlings. — The thinning of such crops as Parsnips, Carrots, Onions, Lettuce, Beet, Parsley, &c., should now be proceeded with. It is advisable that the work of thinning should be done at intervals, and while the plants are in different stages, thus securing the best plants without allowing the seedlings to become drawn by overcrowding. Parsnips should be allowed a distance of 12 inches apart; Carrots, 6; Beetroot, 15 to 18; Lettuce, 12; and Parsley, 9 inches. Keep the surface of the soil light and loose by a frequent use of the hoe.

Early Potatos.—In order to secure tubers in the least possible time we seldom "earth-up" the plants; but during this season immediately the tops are through the soil, and in some cases even before, earthing-up has been carried out as a necessary means of affording protection from frost. Main and late crops of Potatos should be "earthed" as soon as the tops have grown sufficiently high that the work can be done conveniently.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Zonal Pelargoniums.—In order that the plants may make a moderately strong growth and produce a profusion of flowers, these Pelargoniums require light soil moderately supplied with decayed manure from a hot-bed. Variegated varieties require richer soil. Pelargoniums may now be planted, and if the weather is dry let the beds be given a watering previous to planting, and the roots of the plants be made moist also before they are turned out of the pots. If all available strength be brought to bear in the carrying out of a well-arranged plan, the work of planting will be done speedily.

Plants requiring Rich Soil.—Begonias require rich loamy soil, because such liberal treatment induces the plants to flower more continuously. Verbenas, Ageratum, Iresines, Heliotropes also require rich soils and plenty of moisture.

Carnations.—Seedling plants will soon require to be planted into their permanent quarters. Choose a border containing as much fresh virgin soil as possible, and in proportion to its degree of heaviness add other constituents to make it more porous, such as old mortar rubbish, sea-sand, &c. Autumn and spring-planted Carnations will be benefitted if given a mulching of short manure and abundant waterings in dry weather. Apply a dusting of tobacco powder or a syringing with Quassia-water on the first appearance of Greenfly and Thrips. Remove "Cuckoo spit" by means of the finger and thumb. Afford supports to the plants as soon as they become necessary, and in making the ties leave sufficient space for the flower-spikes to have perfect freedom, because the stems would soon snap if there was any tightness.

Roses.—Keep a constant look-out for caterpillers and other pests. Remove suckers as they appear. Stir the surface of the soil with a hoe soon after applying water or after rain. Liquid manure may be applied to Roses showing flower. Tie the shoots of climbing Roses at short intervals, and if mildew is apparent give a thorough wetting with Bentley's Specific, or apply sulphur.

Sweet Peas.—Stake the plants in good time, and spread the growths evenly amongst the twigs if they have become entangled together owing to wind.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Tying and Nailing.—If Peach and Nectarine trees have been properly attended to, all surplus growths will have been removed, and those which remain now will require their first tie or nail, as the case may be. They may first of all be tied in to the shoot from which they are growing, as this will best give the young growth a straight start; the continuation of the shoots may be secured to light pieces of Hazel or Privet. Any shoots that are unnecessarily taking the lead may be stopped. The fruits will have arrived at a safe size to be partially thinned. Remove first those which would get damaged by pressure against the wall or shoots, selecting those in the most prominent position for furnishing the crop. Do not thin them out severely at present, nor until the stoning period is past. The shoots at the top part of the tree being most vigorous the fruits may be left rather closer upon them than on the lower branches. Unusually vigorous shoots may be cropped heavily.

Trees of the Plum and Apricot will need similar treatment to Peach trees in securing the leading branches to the trellis or wall. A final thinning of the Apricot fruits may now be given, and in thinning them it should be borne in mind that those intended for dessert purposes should be given more room than is required for fruits which will be used for preserving. Keep a sharp look-out for green-fly and maggots, and do not let either pest injure the foliage. On hot, sunny days the trees would be much benefited by occasional syringings from the garden-engine.

Mulching.—The dry weather, together with cold winds from the north-east, have made the surface soil very dry, and there are signs of cracking. Where wall-tree borders have received a watering as previously advised and the surface has since become caked, let it be lightly forked over previous to applying a mulch. For trees carrying heavy crops the mulch should consist of decayed or partially decayed manure. Should any of the trees be making very vigorous growth omit the mulch, and hoe over the surface soil occasionally.

Strawberry Plantations.—Where the strawy litter was placed around the plants roughly it will have acted as a protection, and saved some of the flowers from frost. The litter may now be arranged more flatly, putting it under the flower-trusses, it being very unlikely that more frosts will occur.

General Remarks.—All portable copings should be removed forthwith, together with any other protective material. Let fish-netting be dried, and held in readiness for covering Strawberry-plantations. Late-planted trees should be afforded water at the roots, in order to keep the soil in a moist condition. Renew the mulch, if that placed round the trees earlier in the season is not sufficient for present purposes.

APPOINTMENTS FOR THE ENSUING WEEK.

WEDNESDAY, JUNE 7 { Royal Botanic Society's Horticultural Exhibition, Regent's Park (3 days).
Royal Cornwall Show at Newquay (2 days).

FRIDAY, JUNE 9 { Royal Botanic Society, Lecture, 4 P.M.

SALES FOR THE WEEK.

TUESDAY NEXT—
Seventh Annual Sale of Bedding and Greenhouse Plants, at Mile Ash Nurseries, Duffield Road, Derby, by order of Mr. F. Lewis, by Protheroe & Morris, at 11.20 o'clock.

TUESDAY AND WEDNESDAY—
The Stand Hall Collection of Orchids, at Stand Hall, Whitefield, near Manchester, by Protheroe & Morris, at 12.30.

WEDNESDAY NEXT—
Palms, Plants, Liliums, Ferns, Bulbs, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.

FRIDAY NEXT—
Imported Orchids in great variety, at 67 and 68, Cheapside, E.C., by Protheroe & Morris at 12.30.

(*For further particulars see our Advertisement columns.*)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —59·7.

ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, May* 31 (6 P.M.): Max. 68°; Min. 56°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 1 (10 A.M.): Bar., 30·1; Temp., 62°. *Weather*—Bright sunshine with occasional clouds.
PROVINCES.—*Wednesday, May* 31 (6 P.M.): Max. 65°, Guildford; Min. 58°, N.W. of Ireland.

The Temple Show.

OF all the shows, now numerous, that have been held in the famous Temple Gardens, not one, we venture to say, has been more interesting and varied than that which is closing as these lines are passing through the press. A bold attempt had been made to break up the more or less inevitable monotony of these exhibitions. At the same time a more rigid selection seemed to have been exercised, and there was in consequence less of the commonplace and more that was interesting. The space applied for was nearly double what could be afforded. The outdoor groups were specially good on this occasion; the very first entry in our notebook was one of admiration at the fine group of hardy ornamental trees and shrubs made by Messrs. CRIPPS, of Tunbridge Wells, and we are interested to hear that the special jurors told off to award the Veitchian Cup to the best exhibit in the show awarded this, the highest distinction, to this collection.

Similar groups from Messrs. FISHER, SON & SIBRAY; CHEAL, CUTBUSH, RUSSELL, and others were amply worth notice; whilst Messrs. JAMES VEITCH & SONS showed several of their noble Meconopsis integrifolia, Incarvillea Delavayi, Rehmannia angulata, and a selection of new species of Primula from China, of some of which we give figures in our present number; whilst the very remarkable P. Cockburniana was illustrated in our last number. As exhibited on a grass-lawn these most interesting novelties did not show to advantage.

In the tents the groups were more attractively displayed than usual. The Roses of Messrs. PAUL & SON, TURNER, the two firms of CANT, WILLIAM PAUL & SON and others were specially fine, whilst Mr. MOUNT'S cut Roses were beyond praise. Messrs. SUTTON & SONS occupied the end of the tent usually filled with TURNER'S Roses, but on this occasion it was massed with glowing mounds of Calceolarias, Schizanthus, and other showy plants. The groups at the sides and end of the tent, furnished by Messrs. CUTBUSH, VEITCH, and CYPHER, were extraordinarily fine and varied, the plants interesting in themselves, excellently arranged, and superb examples of cultivation. Of the Orchids we give a special note, so that we need only here say that they were quite up to the average, both in quantity and in quality. One Orchid in particular, a variety of Cattleya Schröderæ called "The Baron," unique in its colouration, exhibited by Messrs. SANDER & SON, was acknowledged by the experts to be the most remarkable of all the Orchids shown, although, as it was "not entered" for a certificate, it received no award. We are happy in being able to give a representation of this very extraordinary Cattleya (fig. 142), a description of which is also printed in another column.

Mr. GEORGE ARENS, of Ronsdorff, Germany, showed a remarkably fine group of Primroses—hybrids between P. obconica and P. megaseæfolia. In this group the abundance of blossom and the wide range of colour were remarkable.

Gerberas were staged by several exhibitors, and gave abundant indication of the brilliant future in store for them. Ostrowskya magnifica was shown by Messrs. WARE in finer condition than we ever remember to have seen it, and Mr. REUTHE had flowering branches of various Sikkim Rhododendrons, the showy Crinodendron Hookeri, and Embothrium coccineum. Rhododendron aureum from Messrs. CUTBUSH was very noticeable. Messrs. BRUCE'S Sarracenias were also worth special attention, whilst the new or comparatively new plants exhibited by Messrs. VEITCH, SANDER, WALLACE and others confirm our statement that this was a show, not only of unusual beauty so far as grouping is concerned, but of quite special interest for the number of novelties it comprised and the comparative absence of the commonplace.

We can now only further comment on a remarkable bigeneric hybrid exhibited by A. WORSLEY, Esq., between Elisena longipetala and Ismene calathina. The flowers were snow-white, with narrow segments and a deep fringed cup. For full details of the Exhibition we must refer to another column. Unfortunately, the comfort of the visitors was seriously interfered with by a thunderstorm on the afternoon of the first day, though the number of visitors was as great as ever.

PRIMULA VEITCHII, DUTHIE * (see Supplementary Illustration).—This very handsome new Chinese Primula was discovered by Mr. E. H. WILSON on the mountains of West Szechuan, growing on cliffs and exposed spots at elevations between 8,000 and 10,000 feet. It was shown at the Temple Show of the Royal Horticultural Society on the 30th ult., together with some other novelties from that country. I have much pleasure in dedicating it to Messrs. J. VEITCH & SONS, to whom botanists as well as horticulturists are so much indebted for the knowledge afforded, by the discoveries of their excellent collector, Mr. E. H. WILSON, of so many interesting and beautiful Chinese novelties. Its nearest ally is P. cortusoides, L., but it is a much more robust plant; the leaves are relatively broader in proportion to their length, and their under-surfaces are clothed with white floccose pubescence; the flowers are larger and of a deeper rose colour; the pedicels are stouter, and the calyx is longer and not so deeply lobed.

MESSRS. SANDER'S ORCHID SALE.—The sale of one hundred special Orchids from Messrs. SANDER & SONS, St. Albans, at Messrs. PROTHEROE & MORRIS'S Rooms, Cheapside, on Tuesday last, brought together a fine company, and consequent keen competition, especially for the best Odontoglossums. O. crispum "Roger Sander" secured the highest price ever brought by a single plant at an auction—viz., 875 guineas. O. c. Mundyanum realised 230 gs., O. c. Princess Helena 190 gs., O. c. Franz Masereel 200 gs., O. c. Queen Victoria 100 gs., O. c. President Loubet 70 gs., O. c. Imperatrix Regina 130 gs., and others went at equally satisfactory prices, the total amounting to over £3,500. Mr. E. Rogerson, Mr. J. Leemann, Mr. N. C. Cookson, Mr. Briggs-Bury, Mr. W. Thompson and Mr. H. T. Pitt were among the principal buyers.

THE PARIS SHOW.—In addition to the Orchids mentioned in our report last week, M. CH. BERANEK, 36, Rue de Babylone, Paris, informs us that he obtained a Prix d'Honneur and a Large Gold Medal from the Royal Agricultural and Botanical Society of Ghent for a collection of fifty Orchids. Among these were Cypripedium callosum Sanderæ, Cattleya Skinneri alba, C. intermedia alba, &c.

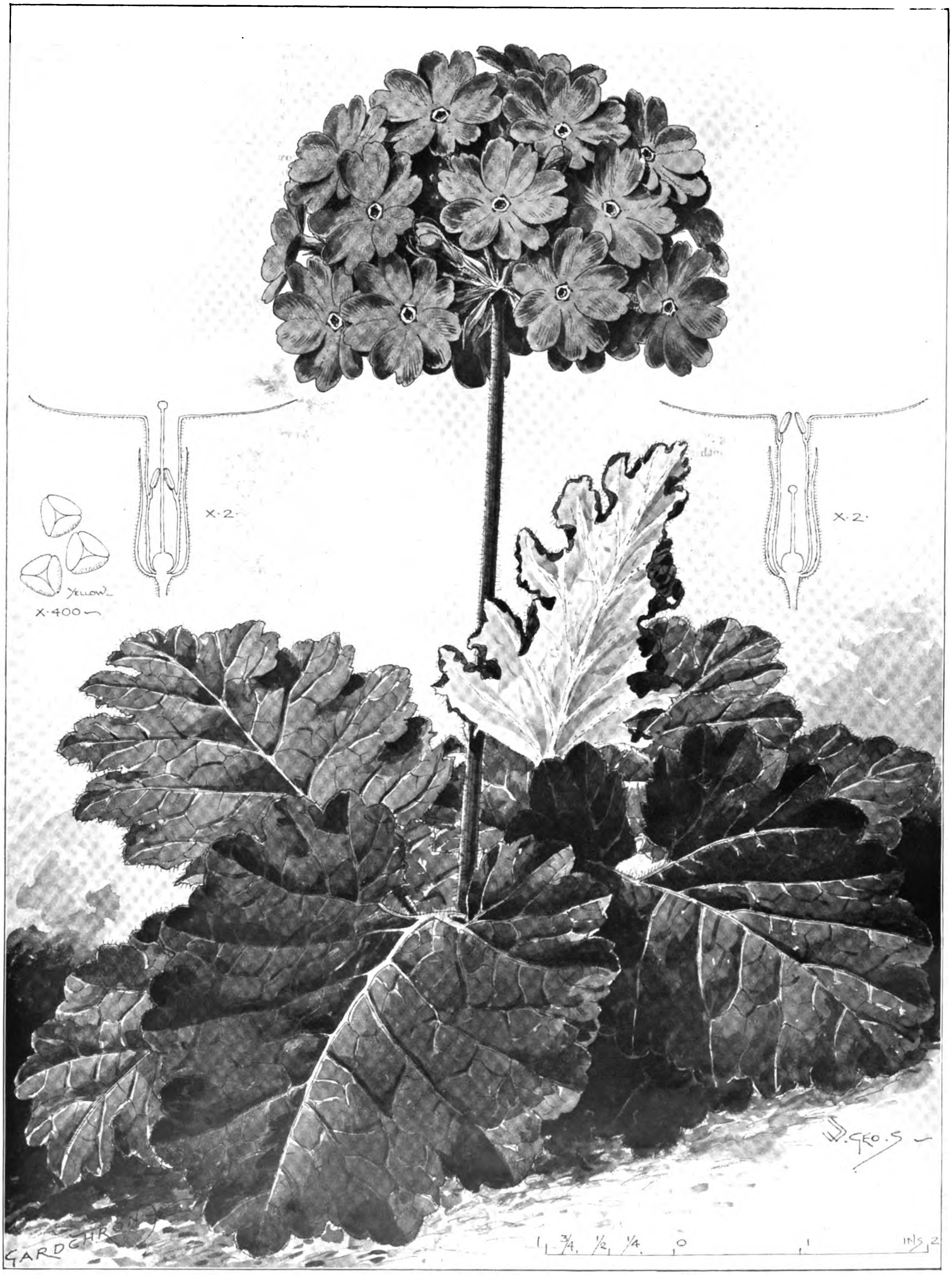
THE ROYAL BOTANIC SOCIETY'S Great Horticultural Exhibition will be held on Thursday and Friday, June 8 and 9, at Regent's Park. On Wednesday, June 7, a private view will be afforded the members of the Society and the Press.

THE KEW GUILD.—The sixth annual dinner of the members of the Kew Guild took place at the Holborn Restaurant on Monday evening last. Dr. AUGUSTINE HENRY, M.A., F.L.S., presided over a company of one hundred and forty-one, of which number four were ladies. As members of the Kew Guild are now engaged in work in almost every country, as well as in our own Colonies, these annual gatherings are usually attended by some who have travelled a considerable distance to be present, or are "at home" for a holiday. On this occasion there were Messrs. HART, of Trinidad; WILKE, Rotterdam; SILLITOE, Khartoum; DON, West Coast of Africa; GILL, Cawnpore; GENTIL, Brussels, and others. Some who had intended to be present were prevented, and (amongst others) a letter of regret was received from Mr. F. W. BURBIDGE, M.A., Dublin. In proposing the toast of the evening Dr. HENRY referred to the present distribution of past Kewites, and to the multifarious duties they have to undertake. Kew men, so said Dr. HENRY, were not merely imperial, they were cosmopolitan. He gave the young men some advice in regard to the carrying out of the work that is necessary to obtain practical experience and theoretical knowledge. His explanation of "don't work too much" was rather that they should not work too long and aimlessly. He recommended concentration and intensity of application whilst at work, and then a gardener who had worked conscientiously during the day would find that two hours' study at night was sufficient. Dr. HENRY referred to Mr. WILSON'S work in China as being of very great credit to the Guild. Mr.

---

* Rootstock slender, creeping. Leaves all radical; blade 3—3½ in. long and about as broad, rugose or subbullate when young; lobes imbricate, 3—7 lin. long, by about 6 lin. broad, coarsely 3—5 toothed; upper surface dark green, sparingly pubescent; lower surface densely clothed with white floccose tomentum; midrib and nerves impressed above, very prominent beneath; petiole about as long as the limb, cylindric below, channelled on upper surface towards the blade, thinly tomentose. Scape stout, up to 14 in. high, densely puberulous. Flowers 10—20, umbelled or in verticils. Bracts many, shorter than the pedicels, unequal, subulate, sparingly pubescent on both surfaces, margins ciliate. Pedicels ½—1 in. long, puberulous. Calyx ½-in. long, brownish-green, pubescent outside, sparingly so within; tube ovate; lobes narrowly lanceolate, very acute, often unequal, the longer ones equalling the corolla-tube in the long-styled form; margins ciliate. Corolla rose-purple or violet, salver-shaped, about 1 in. in diameter, with a narrow, orange-coloured ring surrounding the yellow mouth of the tube; tube equalling or longer than the calyx, pubescent outside, often tinged with crimson; lobes 5 lin. long and 4 lin. broad at the deeply-bifid apex, sparingly pubescent outside. Capsule (when ripe) twice the length of the calyx. *J. F. Duthie, Kew.*

Supplement to the "Gardeners Chronicle."



PRIMULA VEITCHII, A NEW SPECIES FROM CHINA, COLOUR OF FLOWERS ROSY-PURPLE, SHOWING SECTIONS OF FLOWERS, AND POLLEN-GRAINS.

W. Watson, who responded, said that it was time that the Guild considered whether it could not do more than publish a journal, and dine together once a year. He suggested that the members should consider if the energies and influence of the Guild might not be advantageously exerted on behalf of the less fortunate of professional gardeners, and in such a manner that their legitimate grievances might be remedied and the status of gardening raised. Other speakers included Dr. Scott, Mr. Hart, and Mr. J. Weathers. The tables were prettily decorated with Palms and flowers supplied by Mr. Drost, Richmond, a member of the Guild. Songs were contributed by Messrs. T. W. Briscoe, J. M. Hillier, &c.; and a pianoforte solo by Mr. W. J. Neave. Previous to the commencement of the dinner, the annual general meeting was held, at which all the retiring officers were re-elected. The report stated that the Committee had granted a sum of £10 to the widow of a Kew man who was killed some months ago in a bicycle accident. We are very pleased to find that the Guild has thus widened its sphere of work by the exercise of such appropriate benevolence.

AWARDS AT THE ROYAL HORTICULTURAL SOCIETY.—The discussion on the proposals for a modification of the awards originated at a meeting of the Fruit Committee has been postponed till July 18. This will allow of time for the whole question, as affecting all the Committees, to be considered.

ASPARAGUS AT EVESHAM.—An important portion of the market garden cultivation around Evesham is devoted to Asparagus, and considerable acreage is thus profitably occupied, even at high rents. For a long period an annual show has been held, at which prizes are offered for the best examples of the local growers' skill, and it is always an event of much interest in the district. At the exhibition held in the Town Hall on Monday last (May 29), the display was a good one for such a dry and difficult season, about fifty bundles of 100 heads each were shown, and the average weight per bundle was stated to be 15 lb. The prize-winning bundles ranged from 17 to 20½ lb. each, and the length was from 12 to 16 inches, with a diameter at the base of the individual stems of 1 inch or more. In some cases they were green and tender for more than half their length, in others the blanched portion preponderated, and these seemed to be generally most esteemed, though their edible value was questionable. The whole of the exhibits was sold by auction at the close of the show, and the highest prices realised per bundle of 100 were 16*s.* and 17*s.* 3*d.* In former years higher prices have been realised and more sensational weights have been obtained, but the long dry period has militated seriously against this popular vegetable in this country. *R. Lewis Castle.*

HORTICULTURAL COLLEGE, SWANLEY.—By permission of Lady Falmouth, a drawing-room meeting was held recently at 2, St. James's Square, in support of the appeal now being made for £2,000 which is required before the end of July to put the finances of the Horticultural College, Swanley, on a sound basis. Lady Falmouth explained that the meeting had been called to arouse sympathy with the College and its aims. Originally a "mixed" institution, it was converted in 1904 into a college for women only. There was, however, a considerable debt which it was now desired to clear off. If the money could not be obtained the College would have to close its doors. The training provided at the institution gave power and independence to women, and fitted them for work in the Colonies, and yet the College was hampered for want of financial support. The Hon. Secretary read a report dealing with the work carried on. She stated that in 1904 the total number of students was eighty-nine. Eight of them were awarded the College Diploma, and twelve the College Certificate. In the examinations of the Board of Education last year six students gained First-class Certificates for Elementary and nine for Advanced Botany, while nineteen took a First-class in Agricultural Science and Rural Economy, and King's prizes were won in both these subjects. Mrs. John Hopkinson read a paper on the work and aims of the Colonial branch. She stated that the Committee could now point to a number of students settled in South Africa and Canada, who were prepared for independent, salaried, or co-operative work and for the private management of colonial households. Three sisters, after training in poultry and dairy-work, had joined their brothers in a ranch in the North-west Territories and were doing well. Five students prepared for married life in South Africa, Canada, and New Zealand, and two were doing admirably on gardens in Natal, and were greatly appreciated. On the motion of Principal Hopkinson a resolution was passed pledging the meeting to use every endeavour to raise the sum required.

NEW OR NOTEWORTHY PLANTS.

PRIMULA COCKBURNIANA, Hemsl.

This species, figured in our last issue, was first discovered by the naturalist Pratt in the neighbourhood of Talien-lu, on the Tibetan border. In 1890 he brought home dried specimens to the Kew Herbarium, and Mr. Hemsley described it in the *Jour. Linn. Soc.*, xxix. (1892). It was introduced into the Veitchian nurseries by their collector, Wilson, and was exhibited by this firm before the Royal Horticultural Society on May 23 last, and again at the Temple. In describing this species Mr. Wilson says:—"It is common in wet alpine meadows, between 10,000 and 11,500 feet, in the vicinity of Talien-lu. The scapes vary in height from 8 inches to 1½ foot, and have from three to six whorls. From its extraordinary colour it is one of the most striking of all the many species of Primula which occur in these wilds."

SOCIETIES.

THE TEMPLE SHOW.

(See also Supplement.)

GROUPS OF PLANTS, &c. *(continued)*.

Messrs. Jas. Veitch & Sons, King's Road, Chelsea, staged an admirable group of foliage plants, relieved with showy flowering subjects. Great taste was displayed in the method of staging, and a number of stands were requisitioned on which were placed choice forms of Nepenthes—N. Tiveyi, N. Curtisii superba, N. mixta, &c. Caladiums were a feature in the group, the foliage being not only of large size, but admirably coloured; a plant of C. Rose Laing in the centre of the group was superb. Other good varieties were Clio, Madame John Box, Marquis of Camden (rose ground with green margin), Madame E. Pynaert (red self), Oriflamme, Raymond Lemoinier, H. Hoffmann (new), Baron A. R. de Rothschild, Miss Elsie Hoffmann (new), Admiral Togo (green border, blotched rose with crimson veins). Marantas, Anthuriums, Heliconias, Codiæums, and Dracænas were shown in numbers and in excellent condition. Tillandsia zebrina and T. Zahnii were shown in flower. We also noticed a flowering plant of Medinilla magnifica, the curious Ochna multiflora with its showy coloured fruits, brilliant spathes of Anthurium Scherzerianum, A. Andreanum, &c. Some choice Cannas were utilised as corner subjects, while a batch of Hæmanthus Kalbreyeri, backed with plants of Rhododendron, Javanico-jasminiflorum hybrids brightened the centre with their pleasing flowers. The background was furnished with Cocos flexuosus and tall plants of Lilium Brownii and L. Henryi. Standard trained plants of Codiæum cordatum tortile, C. Massangeanum, and C. Laingii, were shown in first-rate condition.

Gloxinias.—Messrs. Carter & Co., who had a varied collection of subjects staged, among them a small quantity of Gloxinias of good quality.

Messrs. Cannell & Sons, Swanley, staged a collection characterised by high quality; among the most striking of the named varieties were Mrs. Avery, Cannell's Scarlet, Kaiser Wilhelm, Model, Petunia, Her Majesty (white), Empress Frederick (of which there was quite a panel staged), Dainty, &c.

Messrs. Peed & Sons, West Norwood, also set up a bank, and among the named varieties were Earl Bathurst, E. L. Peed, Brilliant, Countess of Ilchester, Duchess of York, Rudyard Kipling, &c.

Messrs. Sutton & Sons, Reading, filled one of their fine-raised bays with Gloxinias of the first quality.

Cannas.—Messrs. Cannell & Sons put up a superb group of some seventy or eighty varieties, the heads of bloom were very fine indeed, and they represented the very cream of the collection grown at Swanley. They were one of the features of the large tent. The plants averaged about 3 feet in height.

Cinerarias.—These were sparingly represented. Messrs. Sutton & Sons had groups of the stellate type as wings to their large display.

Messrs. Carter & Co. included among their miscellaneous plants panels of the same type.

Messrs. J. Veitch & Sons staged a collection of dwarf-growing plants of a variety named Antique Rose, the flowers of a pinkish-rose tint.

Pelargoniums.—Mr. H. J. Jones, Lewisham, had a collection of cut decorative varieties in bold bunches. Some of the principal sorts were Viola, Conora, Kingston Beauty, Her Majesty, May Marks, Little Richard, &c.

Mr. H. B. May, Dyson's Lane Nursery, Upper Edmonton, staged a collection of single and double zonal Pelargoniums, the latter preponderating. Good varieties were seen in Duke of Bedford, Countess of Hopetoun, Hall Caine, The Sirdar, Tangare, Mme. Lauder, Golden Gate, Lady Ilchester, Blanche, Lady Dorington.

FERNS.

Fine groups of stove and greenhouse varieties were staged, but very few hardy Ferns were seen, and no new varieties were submitted to the Committee.

Mr. H. B. May, Upper Edmonton, put up a very fine group, which gained a "Silver Cup." Of Nephrolepis the American varieties Piersoni and Fosteri were very fine; N. Mayi, an erect-growing congested form, was quite distinct—this is prettiest in a small state; N. crispato-congesta is a curious miniature form, somewhat resembling a congested form of Scolopendrium. In Adiantums, Clæsianum, with a silver band down the pinnæ, is a distinct Fern. A. Farleyense was well shown; A. versaillense, a pretty dwarf-crested variety; A. curvatum, A. peruvianum, and others were good; Platycerium grande, P. æthiopicum, and P. Willincki were effective. Several pretty crested Pteris were seen; P. cretica generosa, which recently received an Award of Merit, is a distinct and pretty Fern, the pinnæ being cut down into narrow segments; P. Summersi and P. Childsi are beautiful plumose varieties. Gymnogrammas were good. Several Davallias on tall stems made a good effect. Acrostichum aureum, a large plant of which stood up in the centre of the group, was effective.

Messrs. J. Hill & Son, Lower Edmonton, staged a very fine group, which was made up of choice species and varieties displayed in the best possible manner. This group also secured a Silver Cup. In the centre was a good plant of Dicksonia Scheidei, Platycerium angulosa, with large broad fronds, was imposing; P. Hilli, P. Willincki and P. alcicorne were also good. Davallia fijiensis elegans, D. Veitchii and several other good species were seen. Gymnogramme grandiceps superba, G. Peruviana argyrophylla and others. Among Adiantums reniforme is always an attraction; A. macrophyllum striatum is a very pretty variegated variety. Polypodiums Schneideri and Mayi were good; the dwarf sorts, such as piloselloides, vaccinifolium on moss-covered stems were pretty. Asplenium formosum and A. cicutarium are choice species now rarely seen. Of Gymnogrammas, the best silver and gold-fronded sorts were well shown. Gleichenias speluncæ, flabellata, and others were good; Lomaria attenuata, with soft, rosy-tinted fronds, and Lomaria L'Herminieri, a choice gem with bright red fronds; Asplenium nidus, Polypodium iridioides in large specimens, were very effective.

Ed. Ascherson, Esq., Pett Place, Charing, Kent, exhibited some fine specimen Ferns, which included Adiantum trapeziforme, A. concinnum latum, A. Farleyense, Gymnogramma chrysophylla, G. peruviana argyrophylla, with smaller plants arranged among (Silver Flora Medal).

There were very few choice Ferns in the miscellaneous groups. Messrs. Veitch & Sons, Chelsea, had good specimens of Davallia Veitchianum.

Messrs. Sander & Co., St. Albans, put up fine specimens of Polypodium Knightii and Nephrolepis Scotti, an American variety which closely resembles our N. exaltata, but is more compact in habit.

Messrs. H. Low & Co., Enfield, exhibited Pteris Wimsetti compacta, a neat-growing crested variety, which should be useful for market.

Messrs. J. Backhouse & Son, York, in their rock-garden, had some fine plants of the hardy North American Adiantum pedatum, and also Polystichum proliferum diversilobum.

CARNATIONS.

The greater portion of these flowers shown were of the so-called Tree and Souvenir de la Malmaison sections, the latter being readily distinguishable from Tree and border Carnations by their more vigorous fleshy "grass," compact habit, and larger and less regularly formed flowers.

The finest exhibit of these plants came from W. James, Esq., West Dean Park, Chichester (gr., Mr. W. H. Smith), and this was placed at the eastern entrance of a tent running parallel with the Embankment road. The exhibit consisted of a number of plants with very large "Malmaison" flowers of the flesh-coloured type beautifully bloomed. A number of plants of a remarkably tall yellow-flowered variety—not "Malmaisons"—formed a dividing line from the contiguous exhibits, and some plants of a very choice, fragrant, dark crimson-coloured variety, resembling that of H. J. Jones, were arranged in the foreground.

R. Wagg, Esq., "The Islet," Maidenhead (gr., Mr. Phillips), had varieties of "Malmaison" in yellow, cerise, pale pink, white, scarlet, and light and deep crimson colours, the flowers large and of good development generally. All were growing in small pots.

Messrs. Cutbush & Sons, of the Nurseries, Highgate and Upper Barnet, had quantities of finely-grown "Malmaison" varieties dispersed among their admirable group of Roses, in a corner of the large marquee. A variety of a yellowish-pink colour was noted in Rittmeister.

An exhibit of twenty vases filled with fringed and smooth-petalled varieties was contributed by the Carnation specialist, Mr. A. F. Dutton, of Iver, Bucks, among which the following were notable—viz., Fair Maid, tender flesh in colour; the now well-known Enchantress, of a rather lighter tint; Mrs. Thos. W. Lawson, cherry-red, showy, and of large size; Harlowarden, of the same size and colour as the Old Clove; Governor Roosevelt, almost identical in colour and size as is Harry Fenn; and lastly G. H. Crane, a pleasing flower of rosy-crimson colour.

Mr, Maurice Prichard, nurseryman, Christchurch, Hants, exhibited many admirable "tree" varieties in great diversity, and particularly nice were the dark crimson-coloured H. J. Jones, and Mrs. Lawson.

Messrs. Hugh Low & Co., Royal Nurseries. Bush Hill Park, Enfield, exhibited extensively "Malmaison" varieties, among which we indicate Albion (a dwarf plant having flowers of a deep salmon tint), Calypso (a large flower of a tender flesh tint, the central petals salmon coloured, with pink splashes on the petals), the crimson-coloured Churchwarden, Horace Hutchinson (a brilliant scarlet bloom), and Princess of Wales (a fine variety of a pink tint). Among Tree Carnations the new variety Liberty is worthy of notice, and others mentioned as being present in other collections were found on Messrs. Low's exhibit.

Messrs. G. Boyes, Carnation-growers, of the Aylestone Park Nurseries, Leicester, exhibited a small but choice collection, in which we noticed the new Shakespear, Robert Burns, and Queen Alexandra; the first named a fine coral-pink, the second an equally fine rosy-pink, and the third a delicate shade of the same colour. We were informed these will be ready for distribution next year. Another fine Carnation was Dr. W. G. Grace, a bright scarlet variety sent out in 1903.

CLEMATIS.

A fine collection of these plants excellently bloomed was shown by Messrs. Richard Smith & Co., Worcester, the plants numbering about thirty, and trained mostly on globular trellises. Of double and semi-double-flowered varieties, mention should be made of Lucy Lemoine, Countess of Lovelace, Venus Victrix, which have been many years in cultivation. Of single-flowered varieties there were Fairy Queen, purpurea elegans (a grand purple flower), Mrs. G. Jackman, Marie Lefebvre, Anderson Henry, Lord Neville, and the new lilac-coloured King Edward VII. The rosy-crimson Ville de Lyon and Wilsoni, a flower of pale lilac, were much admired by the visitors.

CALCEOLARIAS.

Of these showy plants a new, shrubby strain, mentioned in the *Gardeners' Chronicle*, June 4, 1904, p. 361, having an average height of 5 feet, and very floriferous, was shown in several examples by Mr. J. Jeffries, of Oxford. It is apparently perennial, and partakes of the characteristics of C. Burbidgei. As the crosses between different species of Calceolarias are more fertile than those from the original species from which they have originated, some good decorative hybrids may result from crossing the variety shown with the ordinary herbaceous Calceolarias. The floral colours resembled those of the latter, although in size they were much smaller, and the corymbs more lax.

An excellent exhibit of Calceolarias came from Messrs. Sutton & Sons, Seed Merchants, Reading, and these were well shown in a flattish pyramidal manner along with other exhibits by the firm at the northern end of the largest marquee. The assortment was judiciously made as regarded the colours, the blooms were of enormous size, and generally finely inflated, and the habit of the plants stocky.

R. J. Durham, Esq., "Overton," Ealing, W. (gr., Mr. J. Cook), showed a small collection of dwarf, fairly well-grown plants.

T. H. Lowinsky, Esq., Tittenhurst, Sunninghill (gr. Mr. Thomson), exhibited about fifty plants of a capital strain, having fine large blooms of beautifully varied colouring, and the height of the plants about 18 inches.

Messrs. J. Carter & Co., Seedsmen, of High Holborn, London, staged a small group of medium-sized plants; and Messrs. W. Clibran & Son, Nurserymen, Altrincham, showed about forty plants having flowers of medium size, foliage robust and clean and the colours of the flowers well selected.

RHODODENDRONS AND AZALEAS.

Messrs. John Waterer & Sons, Ltd., Bagshot, Surrey, staged a lovely array of Rhododendrons, having the plants in the best possible flowering condition. Pink Pearl was prominent and eclipsed its neighbours in size of flower and truss, while the shade of colour is of the palest shade of rose-pink; Lady Howe, Charlie Waterer, and Marquis of Waterford are darker-coloured forms; Joseph Whitworth is almost a magenta colour; Gomez Waterer is of beautiful form, pale blush colour with yellow marking on the upper petal; B. W. Currie, Francis Hayes, and Strategist are other notable varieties.

Messrs. Sander & Sons, St. Albans, staged a collection of Azaleas. They were sent from Messrs. Sander's nursery direct to the Show, being landed, as we were informed, on the Embankment pier. Next to the excellence of the plants themselves, the condition in which they arrived was the most astonishing feature. One could not detect an injured bloom, and the whole group presented the appearance of a wealth of flower. They were all selections from A. indica, and the great range of colours in the varieties was remarkable. We have space to name only a few, and of these we include Memoria Lowi, Phœbus, Theodor Keimers, Osiris, Madeleine, and Miss E. Jarret.

Messrs. R. & G. Cuthbert, Southgate, Middlesex, staged a large bank of hardy Azaleas that presented a wealth of flowers of brilliant colours, with suitable greenery furnished by such plants as Maples, Ferns, Asparagus plumosus, and backed by tall Cocos Palms. The arrangement was bold, the centre being raised, and flanked on either side by prominent corner plants. The charming yellow variety Anthony Koster formed the central bank, and here and there were introduced standard-trained plants breaking the continuity and adding to the effect. Among the more notable varieties we may mention J. C. Van Tol (excellently shown), Fanny (with rosy-pink flowers lightly tinted with yellow), Hugo Koster, Unique (an orange-scarlet variety), Raphael de Smet, Aida, Alphonse Lavelée (a handsome salmon-pink variety), Velasquez, &c.

Messrs. Wm. Paul & Son, Waltham Cross, exhibited a number of baskets containing sprays of Rhododendron flowers. Pink Pearl was prominent. Another good variety noticed was atro-rubrum purpureum.

BEGONIAS.

The collections of these plants scarcely equalled those of last year in extent, but the individual plants were quite up to the best standard of quality.

Messrs. John Laing & Sons, Forest Hill, London, staged a grand lot of these flowers. They had some of their premier varieties in batches, such as Lord Kitchener, a "Camellia"-shaped flower of the richest scarlet colour; Mrs. T. V. McConnell, shaded a rich salmon-pink; Mrs. John R. Box, one of the best double "whites"; Lady Grenfell, also white; Lady Kerry, a variety with rose-coloured margin. We also noticed Duke of Fife, a large crenated flower of salmon-pink colour; Sir Howard Vincent, rich scarlet colour; James Buchanan, a "rosette," also rich scarlet colour; Lady Charles Beresford, a tall-growing variety, with primrose-yellow flowers. In addition to the foregoing, single varieties were freely represented; of these the variety Lord Kerry has a large flower of deep scarlet; Lord Howe is also a good single variety, the colour being rich scarlet.

Messrs. Blackmore & Langdon, Twerton Hill Nurseries, Bath, exhibited an excellent strain of these handsome flowers, and presented their plants in the best possible condition. The varieties were all of the double type. A new frilled "Camellia"-shaped variety named Mrs. C. Russell is exceedingly handsome, being of a soft blush-pink colour and of excellent shape. The new variety Amy is a good wavy-petalled "Rose," with exquisite rose-pink colour and having a lighter centre. Snowflake is a new frilled "white." Countess of Warwick (apricot-orange with lighter centre), Frilled Beauty, Mrs. S. Pope, Percy Foster (rich scarlet), Sir T. Lipton, and Mrs. G. M. Soames (new) are notable varieties.

Messrs. T. S. Ware, Ltd., Ware's Nurseries, Feltham, Middlesex, showed a group of tuberous-rooting Begonias, nearly all of which were double varieties. Some of the flowers were showing evidences of the hot weather, the petals in some cases being injured. Miss Rhoda Pope is a "Camellia"-shaped flower with blush-pink margins merging to a lighter centre. Mrs. W. L. Ainslie is a new "yellow"; King Edward VII. has rich scarlet-crimson flowers; Mrs. Arthur Paget, Mary Pope, Lady Suffield, and Mrs. Bean are varieties all worthy of mention.

Mr. A. Ll. Gwillim, Cambria Nursery, New Eltham, Kent, staged a collection of tuberous-rooting Begonias, having single and double varieties in about equal quantities. Mr. J. Portbury is a good "scarlet"; the flower is "Camellia"-shaped, and of the best form. Eltham Glory (picotee-edged), Mars, Golden Crown (yellow), &c.

Messrs. Carter, 237, 238, High Holborn, staged a batch of tuberous-rooting Begonias, none of the varieties being named.

Mr. H. J. Jones, Ryecroft Nurseries, showed a small collection of bedding varieties of tuberous-rooting Begonias.

Frank Lloyd, Esq., Coombe House, Croydon, exhibited a batch of hybrid Begonias of the Worthiana type, having many forms and colours of this free-flowering species.

ROSES.

Messrs. Wm. Paul & Son, Waltham Cross, Herts, staged one of the finest exhibit of Roses. The group occupied the same position as last year and presented a galaxy of lovely flowers. The whole of the collection was comprised of pot plants, the members being excellently grown, well furnished with flowers, and of the choicest varieties. The beautiful Lady Gay (Wichuraiana) was represented by five finely trained plants (see Awards); Farquhar is somewhat similar, but not so bright or large. The whole of the background was staged with Roses of the Rambler type, and among the group were standards and bush-trained plants. Among the best examples seen we may mention Pharisaer (a large flower, soft blush colour), White Maman Cochet, Ulrich Brunner, Mrs. John Laing, Hélène Guillot (new), H.T. Mme. Hector Leuilliot (climbing Tea), Prince de Bulgarie, Crimson Queen, Mme. Abel Chatenay. A number of plants of the variety Débutante (see fig. 146, p. 347) (Wichuraiana), were prominent in the centre of the display. The group was set up with great taste and was much admired.

Adjoining Messrs. Wm. Paul's exhibit was a display of Roses exhibited by Mr. Chas. Turner, The Royal Nurseries, Slough. The arrangement of this group was bold—tall standard and climbing varieties being liberally utilised to furnish relief to the general collection that formed the groundwork. This latter was composed of well-grown specimens of such types as Mrs. R. G. Sharman Crawford, Frau Karl Druschki, Souvenir de Pierre Notting, La France, Juno, and other equally beautiful varieties. Foliage plants, Ferns, Palms, Dracænas, &c., were utilised to enhance the effect.

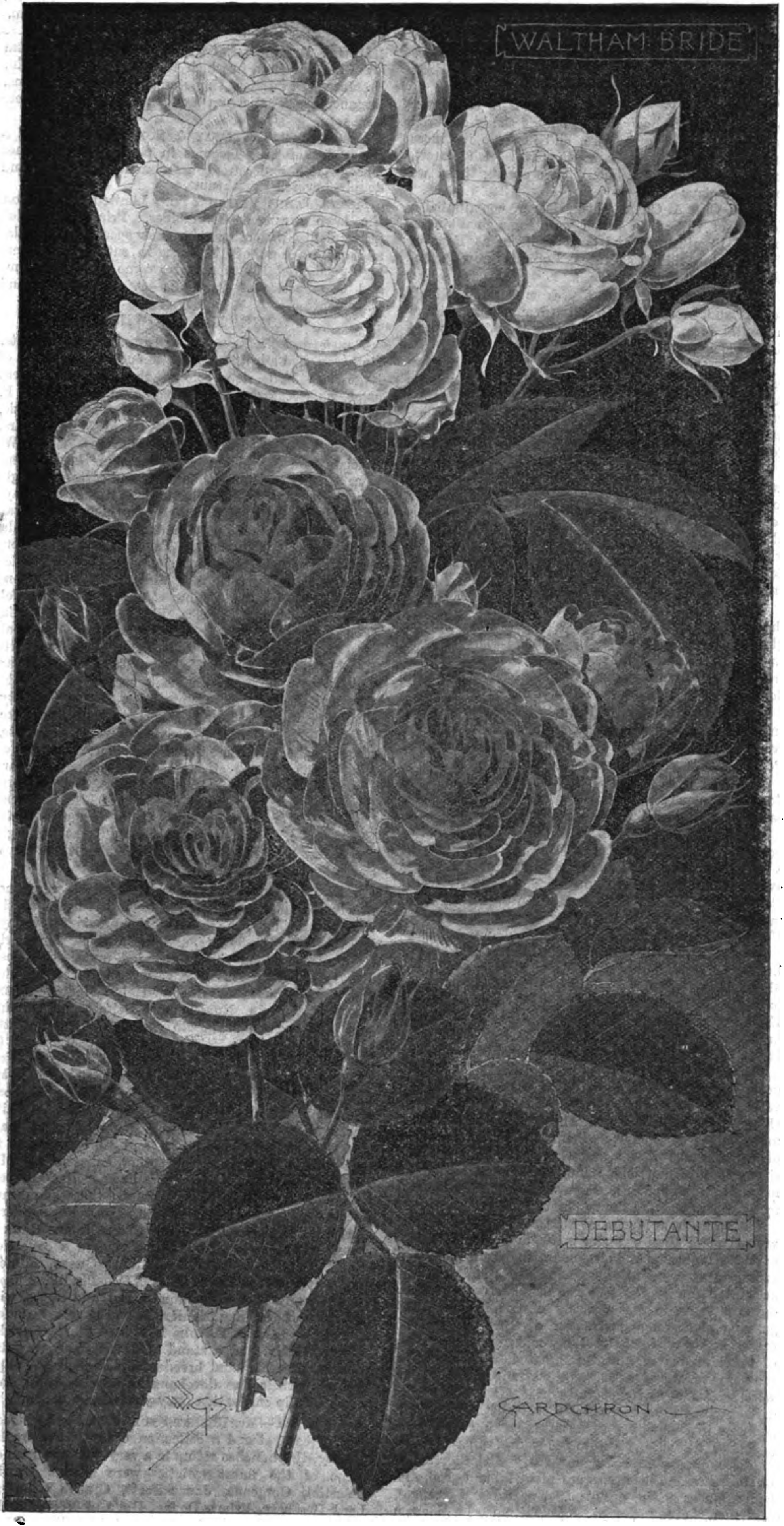

WALTHAM BRIDE
DEBUTANTE
W.G.S.
GARD. CHRON.

FIG. 146.—TWO OF MESSRS. W. PAUL AND SON'S NEW (WICHURAIANA) ROSES: WALTHAM PRIDE, PURE WHITE; AND DÉBUTANTE, PINK.
Drawn by Mr. Worthington G. Smith.

Messrs. PAUL & SON, The Old Nurseries, Cheshunt, N., furnished one corner of the large tent with a magnificent group of Roses. Standard and other trained plants were freely utilised in the group, the back portion of which was wholly occupied by trained plants of Polyantha varieties, such as Crimson Rambler, W. K. Harris (Wichuraiana), Hélène, Blush Rambler, &c. Dwarf plants in pots freely flowering and all showing excellent culture, formed a groundwork, and the flowers were of the best possible quality, indeed the quality was quite equal to any in the show. Frau Karl Druschki was exhibited in all the magnificence characteristic of the variety, also Mildred Grant, Souvenir de Président Carnot (excellent), Rev. Alan Cheales, Glory of Cheshunt, Lady Roberts, David Harum (a new Tea, full flower, of rose-pink-colour; see Awards). We have no space to name a tithe of the other beautiful things in this excellent exhibit.

Mr. GEO. MOUNT, Canterbury, Kent, staged a collection of Roses. The position occupied by the flowers did not permit of their being displayed to the best advantage, but opportunity was taken of the sloping canvas roof of the tent to form a bower with such subjects as Dorothy Perkins. The Roses were displayed in batches of one variety and in boxes, the latter containing exquisite examples of many choice kinds; such as Liberty, Madame Gabrielle Luizet, Bessie Brown, &c. In the vases were arranged such beautiful varieties as Ulrich Brunner, Mrs. John Laing, Frau Karl Druschki, Mrs. R. G. Sharman Crawford, Madame Gabrielle Luizet, and Liberty, all in excellent condition—in fact, the flowers were some of the best in the show.

Messrs. BEN CANT & SONS, Colchester, set up a collection of Roses, among which the climbing varieties were a feature, Blush Rambler being especially fine. Hélène is a commendable variety; it produces large trusses of its pleasing flowers in profusion. Dorothy Perkins was shown well. We were pleased with the H.T. Gruss an Teplitz, a semi-double flower of a handsome rosy-pink shade. Leuchtstern, Ulrich Brunner, Frau Karl Druschki, and many other well-known varieties were included in the group. A tray contained flowers of the variety Maréchal Niel of the richest shade of yellow, the flowers in addition being large and of good shape.

HOBBIES, Ltd., Dereham Nurseries, Norfolk, put up a group of flowering subjects in which Roses were the principal feature. Varieties of the climbing and Polyantha type were made a special feature, and excellent indeed were the examples displayed. A new variety named Philadelphia Rambler was given an Award (which see). The standard plants of Dorothy Perkins, Alberic Barbier, Blush Rambler, and Waltham Rambler were covered with their trusses of bloom. The variety Noella Nabonnand is pleasingly scented, and the bright scarlet flowers are handsome; Madame de Watteville was shown well. Messrs. HOBBIES also staged a collection of Sweet Peas, utilising these brilliant subjects for an edging. Carnations, Clematis, and other greenhouse subjects completed the group.

Messrs. FRANK CANT & CO., Braiswick Rose Gardens, Colchester, showed an extensive exhibit of Roses. Many of the flowers showed signs of the hot weather, and were, if anything, past their best condition. The rich flowers of Liberty were displayed to advantage in this collection; also the Austrian Copper Briar. Mrs. W. J. Grant was noticed, also a large number of flowers of Souvenir de Pierre Notting. Such varieties as Blush Rambler, Waltham Rambler, Hélène, and the new variety Philadelphia Rambler, were trained at the background, or hung gracefully down over the plants and flowers on the staging beneath.

Messrs. T. S. WARE, Ltd., staged a miscellaneous collection of flowering subjects, including a good display of Roses. William Allan Richardson was noticed in bud and fully opened; the dwarf-growing Madame N. Levavasseur was shown to advantage and in good form. Another dwarf free-flowering variety is Gloire de Polyantha; this is a pink variety of very free-flowering habit. Aschenbrödel is a good dwarf "China." Comtesse de Cayla, also a China, has an unique colour, which may be likened to copper-orange. Boxes contained excellent examples of such varieties as Frau Karl Druschki, Zéphyrine Drouhin, Mrs. Ed. Mawley, &c.

ALPINE AND HERBACEOUS PLANTS.

If it is not possible to increase the area devoted to hardy plant exhibits at the Temple Show from year to year, it is obvious that improvements in the way of selecting and arranging them receive a greater share of attention than formerly. The rockery exhibits increase in size and number, and the huge masses of cut flowers banked high and thick in a more or less meaningless fashion are fewer. For the rest we can only say that the hardy plants were good and numerous, and we noted many choice specimens that space will not permit us to mention even by name.

In the opening of the long tent on the Embankment side we came first into contact with a small rockery exhibit from Messrs. Carter & Co., High Holborn, in which choice Saxifragas, Edelweiss, Hutchinsia alpina, Silenes, the brilliant Ourisia coccinea, Fair Maids of France, and tall spikes of Saxifraga pyramidalis were seen.

Near to this exhibit the Misses Hopkins, Mere, Cheshire, had a very neatly arranged rockery group, in which the double Cambrian Poppy, Armeria Laucheana (rosy-pink, 3 inches high), Delphinium nudicaule, with Phloxes, Erinus, and many Aubrietias were seen to advantage. Many choice hardy Ferns were in this group, Athyrium glomeratum being noticeable by its density and dwarfness. It is a rare kind, and the name is not familiar.

Mr. H. C. Pulham, Elsenham, Essex, staged many plants in a rockery exhibit, particularly the hardy Cypripediums, Saxifraga longifolia, Phlox divaricata alba, many Alpine Phloxes, Gentiana verna, the white-and-rose-coloured forms of Aster alpinus, the white trailing Saponaria ocymoides alba, and others.

From Mr. R. Farrer, the Craven Nurseries, Clapham, Yorks, came some of the choicest things seen at this exhibition; the lovely Eritrichium nanum for example, Myosotis rupicola, Haberlea rhodopensis, Ramondias, &c. A fine lot of the hardy Lady's Slippers, in which Cypripedium macranthum ventricosum was a finely-coloured example, was shown. Dianthus alpinus albus, Primula farinosa, a perfect gem, and the very rare white form in much less quantity. Meconopsis integrifolia was here too; and perhaps the best of the group was Edraianthus serpyllifolius, of which a large colony was adorned with the rich purple bells on trailing stems. Here and there amidst these flowers Saxifraga cæsia, a white-flowered crustaceous kind, appeared—a pretty picture indeed.

The Guildford Hardy Plant Nursery (Mr. A. R. Upton) contributed, as is its wont, a neat and interesting array of choice alpine plants, with rock shrubs, &c.—Primula sikkimensis, P. japonica in colours, the Edelweiss, Globularia cordifolia, Veronica Hulkeana, Erinus in variety, the vernal Gentian (very rich blue), towering spikes of Eremurus, Ledum palustre, the Snowdrop Anemone, &c.

Messrs. J. Cheal & Sons, Crawley, also had a rockwork exhibit planted and arranged with good species. Here we noted Achillea rupestris, Dodecatheons, Edraianthus serpyllifolius, Lotus siliquosus (a pale-yellow flower with trifoliate leaves), Aquilegia alpina, Linaria hepaticæfolia alba, and a large example of Lupinus polyphyllus roseus, which a year ago obtained the Award of Merit.

Mr. B. Ladhams, Shirley. Southampton, contributed perennials, chiefly in the cut state—Gaillardias, Pinks, Columbines, Heucheras and a large-flowered Armeria of the plantaginea type named A. gigantea. It is a good and showy plant.

Most interesting was the well-arranged rockery from Messrs. Backhouse & Son, York. Here with a sandstone or millstone grit rock were associated many of the most delightful of plants that the alpine lover could desire. Slightly boggy depressions were covered with the vernal Gentian, Adiantum pedatum, Sarracenia purpurea, and such things, while near by fine masses of Cypripedium spectabile, C. acaule and others met the eye at once. Gynerium Westerlingi, the variegated Pampas, was here, and not far away such rare things as Gentiana pyrenaica in a fine tuft full of flower-buds, Dianthus Freynei, D. F. alba (very rare), Primula farinosa alba, also a gem, and others. We cannot pass this exhibit without expressing our appreciation of the excellence of the arrangement, and the remarkable proportion between the rock and the alpines employed. The weathered stone, too, was surely no accident, as it here appeared. The very essence of natural grouping was observable throughout.

Messrs. Richard Smith & Co., Worcester, had a showy group in which Tree Pæonies were seen in good condition. We noted the varieties fragrantissima (extra fine white), Olivia (white), Perfection (rose), &c. Pyrethrums, Columbines, Aster alpinus (very fine), Irises, and Poppies were also in considerable array.

Mr. R. C. Notcutt, Woodbridge, also staged showy perennials, as Lupins, Pyrethrums in variety, of which Arminta is a fine single pink-flowered form. Irises were freely shown, also early Gladioli, Geum miniatum, &c. A very showy Poppy is Lady Roscoe, of rich salmon-orange tone, each petal having a dark blotch.

The Eastern Poppies from Mr. W. J. Godfrey, Exmouth, were a showy lot, the huge richly-coloured blossoms being of great size, and in some instances remarkable in colour. Exmouth Rival (rich claret), Loveliness (pink and salmon), were among those we noted at a glance.

Messrs. C. & A. Clark, Ltd., Dover, contributed a nice lot of things, in which were some good single-flowered Pyrethrums, and such subjects as Papaver Mrs. Marsh, Achillea argentea, Lupinus Snow Queen, Heucheras, and the like.

Messrs. Reamsbottom & Co., from Geashill, King's Co., Ireland, brought St. Brigid Anemones and others in capital form. King of Salmons is a distinct and novel colour in this lot.

Messrs. Geo. Jackman & Son, Woking, had an excellent group, showing a few good things in large numbers rather than an endless array; hence the effect was good. Trilliums, early Gladioli, Ramondias, double Cambrian Poppy, Gerberas, Eremurus, Eastern Poppies, hardy Cypripediums, &c.

Mr. G. Reuthe, Keston, Kent, had a very interesting exhibit, in which such semi-hardy plants as Embothrium coccineum, Crinodendron Hookeri, and various Rhododendrons mingled with the more hardy alpines and the like. Of the latter class Anemone narcissiflora with white flowers, Sarracenia purpurea, Pinguicula grandiflora, Eremurus Elwesii albus (see Awards), Incarvillea grandiflora, Gentiana verna and others were seen.

Messrs. Barr & Sons, Covent Garden, staged in their usual place a large array of Eastern Poppies, Shirley Poppies, Irises, Pyrethrums, Ixias, Pæonies, Lupins, and such things. Androsace villosa, Iris cristata, Anemone alpina, white Eremurus, with double Poet's Narcissus were also of note.

Messrs. Paul & Son, Old Nurseries, Cheshunt, in a small group had Aster alpinus roseus, and A. a. albus (very good), also Iris Susiana, Heuchera hybrids, Poppy Mrs. Marsh, Anemone sulphurea, &c.

Messrs. B. S. Williams & Son, Holloway, had globe flowers, Anemones, Poppies, perennial Cornflowers, early Gladioli, and similar things in the cut state.

Messrs. Bakers, Codsall and Wolverhampton, we believe exhibited hardy plants for the first time at a "Temple" show, and in a most creditable manner, everything being fresh and good. Long-spurred Columbines, Scillas, Poppies, Pyrethrums, Edelweiss, many Aubrietias, Dianthuses, Incarvilleas, alpine Phloxes, and other things in considerable numbers.

Mr. Maurice Prichard, Christchurch, Hants, also had a good and highly attractive exhibit, in which Iris filiformis, a large kind midway between I. tingitana (see fig. 140, p. 339) and I. xiphion, was noticeable. Eremurus, single and double Pyrethrums in fine array and excellent condition, formed a big attraction; Irises, Lilies, and Pæonies were well shown.

Mr. Amos Perry, Winchmore Hill, had a showy group, in which the blue Phlox canadensis Perry's variety (see Awards) was a central figure. Other things noted included Hyacinthus amethystinus albus, many spikes of Eremurus, Primula sikkimensis, Irises of the Korolkowii set and the Cushion group, the showy Geum Heldreichi, Lilium colchicum, Ostrowskia magnifica, Incarvilleas, Papaver Mrs. Marsh, and many other good and showy plants and flowers.

The group from Messrs. Wallace & Co., Colchester, was of more than ordinary merit, and of considerable extent. Lightness and elegance with excellent taste in arrangement were all here associated, and in part accounted for by the free use of plants in pots, as opposed to an exhibit entirely of cut flowers. The growing plant offers instruction of the best type, and cannot be overestimated. We would like to see more of this kind of thing at this great show. The plants too were as meritorious as was the arrangement. Here were a dozen or so Heuchera hybrids, all free flowering and elegant; here, too, a rich display of hardy Cypripediums in company with Primula sikkimensis, Viola pedata, Trilliums, Adiantum pedatum, &c.; and there, in drier quarters, the quaint early Calochortus or Cyclobothras. Lilies too were plentiful and good, and here again came the groups, such as Hansoni (orange), Martagon alba excelsa, Colchicum longiflorum superbum, with venustum elegans in variety, &c. Ixias, Ornithogalum arabicum, and quite a distinct form of Meconopsis integrifolia was noted here. A new unnamed Poppy with pyramidal habit had a small orange-coloured flower not unlike P. rupifragum, though deeper in colour and of distinct growth.

Messrs. Bunyard & Co., Maidstone, had a capital lot of hardy things, in which Irises, Geum Heldreichi, Eremurus, Day Lilies, single and double Pyrethrums, Ranunculus, Thalictrum aquilegifolium, and others were seen.

Messrs. James Kelway & Son, Langport, had a showy lot of Tree Pæonies in pots, and in another place a rich and varied assortment of single and double-flowered Pyrethrums.

Messrs. James Veitch & Son, Limited, Chelsea, on the lawn arranged Columbines, Primula japonica pulverulenta, with other choice new species of Primula, and quite a host of Eremurus in cut spikes. Some highly-coloured Heucheras also came from this firm, and two species of Corydalis—C. thalictrifolia and C. tomentosa.

SOME CUT FLOWERS.

Pansies and Violas.—Messrs. Dobbie & Co., Florists, Rothesay, had a brilliant collection of Fancy Pansies of large size and rich colours that attracted great attention. Among the leading flowers were Miss F. Warren, Mrs. Campbell, Archie Milloy, W. McKenzie, Miss A. B. Douglas, Victoria, David Wilson, Mrs. Sherwood, Miss Yorke, John Pickens, Mrs. W. Sinclair, and David Airdrie. Some of these blooms were 3 inches and more in diameter and correspondingly stout in texture. This collection was backed by sprays of Violas and flanked by some very fine blooms of African Marigolds and some finely marked French Marigolds. Mr. William Sydenham, Tamworth, had a very fine and varied collection of Fancy Pansies, which seem to colour well in the Midlands. Chief among them were Alvaston Yellow, Asthore, Cavalier, Col. M. R. G. Buchanan, Device, Floria, Ida, Joe Nadin, Lord Roberts, Marmion, Mary Sydenham, Miss Neal, Mrs. S. Craig, Petunia, Robert G. Allan, Tamworth Herald, and Tamworth Yellow. The leading Violas, which were arranged in neat sprays, were John Quarton, Endymion, Commander, Peace, Beauty, Planet, Sunbeam, Bland Sinclair, Grey Friar, &c.

Mr. Howard Crane, Woodview Terrace, Highgate, staged in the open some round baskets neatly arranged with Violas of such effective sorts as Imperial, Mary Hope, Marbled Rose, Dolly, Rosandra, Bridal Morn, Bessie, Devonshire Cream, Duchess of Fife, Ethereal, Marian Waters, Mrs. E. A. Cade, Seagull, White Empress, &c. Messrs. Stark & Son, Great Ryburgh, had a few Violas in the open, chief among them Royal Sovereign, deep yellow.

Tulips. — The late-flowering Tulips were not nearly so numerously represented as is usual at the the Temple Show, the heat of the previous few days had told upon the flowers, and those which were fairly fresh when staged soon expanded under the close atmosphere of the tents. A very good collection under the circumstances was staged by Messrs. Alex. Dickson & Sons, Nurserymen, Belfast and Dublin, who had such fine Darwin varieties as Clara Butt, Europe, La Tulipe Noire (very dark), Margaret (a delicate and beautiful variety), Ministre Roell (rich poppy-red), Norma, Pride of Haarlem, Prof. M. Foster, The Rev. H. D'Ombrain, Bronze King, Leghorn Bonnet, Prima Donna, Rev. Harpur Crewe, White Queen, Glow, &c. The flowers generally were characterised by great substance, and they appeared to stand the heat better than other collections. Mr. R. H. Bath, Ltd., Wisbech, had a limited collection of late varieties, chief among them Flambeau, Faerie Queen, Anthony Roozen, Mrs. F. Sanders, Margaret, White Queen, Glow, &c. Messrs. Barr & Sons, King Street, Covent Garden, had a collection which comprised Goldfinder, Bronze Queen, Edmée, Yellow Queen. Calliope, Louis XIV., Phyllis, Purple Perfection, Bouton d'Or. Jaune d'Œuf, and Negro, with examples of the English florists' and Parrot varieties. The Hon. H. A. E. de Montmorency, Carrickmines, Dublin, had a stand of twenty-four very fine blooms of rectified and breeder English florists' Tulips, which by their fine development recalled the palmy days of Tulip cultivation forty years and more ago.

Sweet Peas.—Mr. Robert Sydenham, Tenby Street, Birmingham, staged a collection characterised by fine quality, the bunches set up in a very tasteful manner. Some of the finest varieties were Gladys Unwin, Celestial, Gorgeous, Janet Scott, Orange Countess, Lord Rosebery, Prima Donna, Duke of York, Scarlet Gem, Miss Willmott, Lady Grisel Hamilton, Black Knight, Triumph, King Edward VII., Florie Norton (deep lavender, a variety which keeps its colour well), and Rose Sydenham. Mr. H. J. Jones, Ryecroft

Nursery, Lewisham, had in fine character King Edward VII., Bolton's Pink, Mrs. W. Wright, Dorothy Eckford, Miss Willmott, Gladys Unwin, Gracie Greenwood, &c. Messrs. JONES & SONS, nurserymen, Shrewsbury, had a representative collection, including most of the varieties before mentioned (they were nicely set up) Spanish Iris, &c. Mr. C. W. BEARDMORE, High Street, Winchester, had a small but very choice collection of leading varieties. Messrs. DOBBIE & CO., seedsmen, Rothesay, also had a similar collection.

Rose Philadelphia Rambler.—A climbing variety, resembling Crimson Rambler, save that the flower is of a much richer type, the colour being dark scarlet. The flower is also of somewhat more substance than the older variety. Shown by HOBBIES, Ltd., Dereham.

Begonia Madame Adeline Patti.—A double-flowered variety of large size and good form; colour salmon-red approaching to orange-red. Shown by Messrs. BLACKMORE & LANGDON.

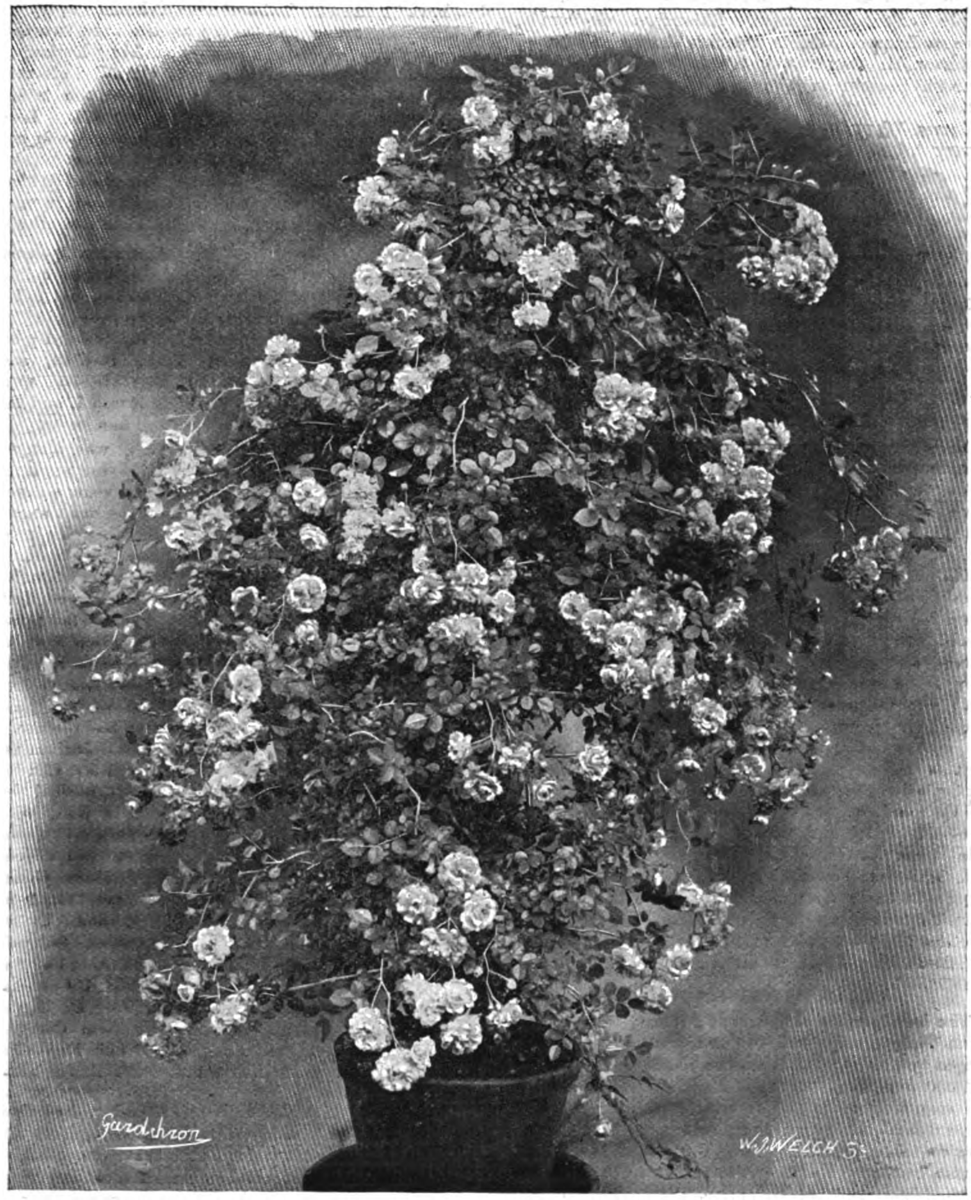


FIG. 147.—RAMBLER ROSE "LADY GAY": COLOUR OF FLOWERS CHERRY-ROSE.
Given an Award of Merit at the Temple Show.

Awards.

AWARDS OF MERIT.

Rose Lady Gay.—This is a Wichuraian Rose, of American origin. It is quite one of the best things among climbing Roses, and should prove a valuable addition to the Rose garden. The trusses of flowers hang in the form of sprays on long growths, and are produced in clusters of a score or more flowers. The colour of the flowers is deep rose, and the individual blooms may be not inaptly likened to a small pink Carnation (see fig. 147). Exhibited by Messrs. WM. PAUL & SON, Waltham.

Rose David Harum.—A hybrid Tea, with flower of large substance and of a pleasing rosy-pink colour. The shape is good, and the petals when reflexed give deeper shadings of rose. The variety should prove valuable for planting in beds and borders. Shown by Messrs. PAUL & SONS, Cheshunt.

Begonia Madame Granby.—A large double flower of lemon-yellow colour. Shown by Messrs. WARE, Ltd.

Edraianthus pumila. — This is perhaps the most diminutive member of this genus, the pale blue erect bells freely produced on a very close, dense, and dwarf cushion-like growth. The plant figures among the most rare and choice of dwarf alpines. Exhibited by Messrs. WM. CUTBUSH & SON, Highgate.

Eremurus Elwesii albus.—A fine white-flowered form of Elwes's variety of E. robustus. The plant possesses the same style of growth and the identical character of flowering seen in the type. From Mr. G. REUTHE, Keston, Kent.

Ivy-leaved Pelargonium Hon. Mrs. Boyle.—A compact yet free grower of shrubby-like habit, the large double flowers of a pleasing rosy-pink tint freely produced in large trusses. From Mr. C. TURNER, Royal Nursery, Slough.

Ivy-leaved Pelargonium Mons. Rosaleur.—A variety with deep carmine-rose-coloured flowers, and of vigorous habit. Shown by Mr. W. J. Godfrey, Exmouth.

Phlox canadensis Perry's variety.—This is a good and improved variety of a well-known plant, and it is obviously a good border subject. Mr. Perry has frequently exhibited the plant, but never before in such perfection of colour and strength as upon this occasion. Exhibited by Mr. AMOS PERRY, Winchmore Hill.

Primula × *Arendsi.*—This Primula was shown by Herr GEO. ARENDS, Ronsdorf, Germany, who described it as a hybrid between P. obconica and P. megaseæfolia. In general appearance the plant is similar to a glorified P. obconica. The flowers were individually nearly inches across, of rich lilac-pink colour, and are produced in many-flowered umbels. The leaves more nearly resemble those of P. megaseæfolia, and the petioles are exceedingly hairy. We think the hybrid will make a very fine garden plant for the cool greenhouse (Award of Merit). The same exhibitor showed plants of P. obconica which represented much variation of colour in the flowers, and one named P. obconica oculata had a ring of exceedingly deep and rich colour around the eye, having an effect almost similar to that seen in Messrs. Suttons' "Duchess" strain of the Primula sinensis.

Rhododendron Smithi aureum.—This is a hardy Rhododendron with creamy-yellow-coloured flowers. Shown by Messrs. W. CUTBUSH & SONS. It is very distinct.

Rhododendron (*Azalea*) *Julius Koehrs.*—This plant is a very handsome form of A. indica. The flowers are of immense proportions, but they are in addition of a most pleasing shade of colour, being scarlet-maroon. Some of the flowers were 5 inches in diameter, and they all show a tendency towards doubling. The habit is sufficiently lax to enable the greenery of the foliage to be seen. Shown by Messrs. SANDER & SON, St. Albans.

Sarracenia flava gigantea.—A very large-growing variety, in which the cylindrical growths come almost 3 feet high, green, except the "lid," which is marked with dull red veins. Shown by Mr. A. J. BRUCE.

Verbena hybrida The King.—This is a variety of Verbena similar in habit to that of Miss Willmott, but the flowers are of richer rose colour. Shown by Messrs. W. CUTBUSH & SONS.

EXHIBITS MADE IN THE OPEN-AIR.

The exhibits out-of-doors of trees, shrubs, alpines, and new plants from China were extensive and most interesting to the visitors.

Messrs. J. VEITCH & SONS, The Royal Exotic Nursery, Chelsea, exhibited a large number of herbaceous Pæonies grown in pots in variety, in colours ranging from white through various shades to deepest crimson. This method indicated the uses to which these plants can be put on terraces and paved spaces, where it is impossible to plant them out. There were plants of Primula japonica growing in shallow tubs, the flowers crimson and disposed on stalks of from 2 feet in height; of Incarvillea Delavayi, furnished with beautiful blooms of rosy-crimson; various species of Meconopsis, including integrifolia and punicea; Primula tangutica and P. Cockburniana, the latter possessing small red flowers. A large number of Eremurus robustus with immense flower-spikes were themselves a very remarkable exhibit, as was Acer palmatum corallinum with very distinct rosy-coloure foliage.

Messrs. FROMOW & SONS, Chiswick, exhibited a large collection of Acer japonica in variety, and as standards and bushes.

Mr. L. R. RUSSELL, Nurseryman, Richmond, Surrey, showed a miscellaneous assortment of "picture" trees, green and variegated Ivies, Rambler Roses, Ceanothus dentata (having bright blue flowers), the floriferous white-flowered Polygonium Baldschuanicum, Aralia Maximoviczii (with deeply-lobed palmate leaves which have dark-brown stalks), and many others.

Mr. DAVID RUSSELL, Essex Nurseries, Brentwood, staged a picturesquely arranged group of hardy trees and shrubs, similar as regards its constituent materials to the foregoing, but including Rambler Roses, Ghent and rustica Azaleas, Weigela, and Clematis as foils to the foliage plants.

Messrs. CUTBUSH & SON, Highgate and Barnet, had, at the cost of much labour constructed an irregular bank of tufa and earth, and planted it with suitable Alpine and rock plants with very good effect. In one part were massed large numbers of Eremurus robustus, in others Gentianas and Azalea mollis. Near the base of the mound there were planted Osmunda regalis and other moisture-loving Ferns, Cypripedium Calceolus, Sarracenias, Gunnera scabra, &c. There were some inappropriate plants, but as a whole it was a bit of work done in a short space of time the firm had the right to be proud of, and it seemed to have a special attraction for the visitors whose note-books were constantly in evidence. Hardy Orchises, hardy Cypripediums galore, Bletias, Anacamptis pyramidalis were associated with Darlingtonias and Sarracenias, Trilliums, and Ourisias, and so forth. Myosotidium nobile was in good flower. Liliums were plentiful on the higher slopes; Water-Lilies in tubs were at one's feet; choice alpines had nooks all to themselves; and Funkias, Gunneras, Bamboos, and Phormiums each spoke of the study the arrangement involved. A touch of colour came from Azalea mollis, and these excepted, everything savoured of a well-equipped rock-garden of some standing. This firm was also the exhibitor of a great number of topiary objects in Box and Yew.

Messrs. T. Cripps & Son, Nurserymen, Tunbridge Wells, had arranged a large group of trees and shrubs that was rich in variegated forms of Acer, many of their own raising from seed—Quercus, Cornus, Cedrus, Retinospora, Dimorphanthus mandschuricus, with a white margin to the leaf; the yellow variety of Catalpa syringæfolia, Fremontia californica, Vitis, various species; Styrax japonica, a hardy shrub from Central Japan, carrying numerous white flowers during the summer months. The group was closely packed with choice things too numerous to be named in detail here. Everything shown was vigorous and in good condition, Conifers being especially good specimens of their respective kinds. The group was awarded the Veitchian Cup, as being the most generally meritorious exhibit in the show.

Messrs. Fisher, Son & Sibray, Ltd., Royal Nurseries, Handsworth, Sheffield, were the exhibitors of a large group or border of trees and shrubs with green or variegated foliage and in great variety. The more telling were Acer japonicum aureum, and other Japanese forms of Acer palmatum; large spreading forms of Dimorphanthus mandschuricus and Quercus Concordia.

The group set up by Messrs. Cheal & Son, Crawley, Sussex, was very ornamental, as many flowering shrubs were included in the contents. There were Cytisus purpureus albus, C. Andreanus, Lilacs in variety, Wistaria sinensis and W. multijuga alba, numerous Azaleas; Viburnum plicatum, with its snowy balls of white flowers, relieved by masses of golden Elms, Thuyas, Sambucus, Quercus, and other variegated trees and shrubs.

Miniature trees from China and Japan were on show from Messrs. Barr & Sons, King Street, Covent Garden; and Messrs. Carter & Co., seedsmen, High Holborn.

Messrs. R. Smith & Co., Worcester, were exhibitors of Japanese Acers and Conifers.

Messrs. Paul & Son, The Old Nurseries, Cheshunt, showed Rhododendrons.

Messrs. Kelway & Sons, Langport, exhibited hardy Tree Pæonies in flower.

Messrs. Pulham & Son, 71, Newman Street, Oxford Street, W., arranged a rockery exhibit in the open, planting it with alpines and shrubs. Not a few of the plants, however, were misplaced—Trilliums in the higher and drier positions, for example, could only fail miserably, and other plants would certainly not be found on a rockery under ordinary circumstances.

MISCELLANEOUS.

Mr. R. Irwin Lynch, Curator of the Cambridge Botanic Gardens, exhibited, as last year, a group of hybrid Gerberas in flower, hybrids that he has raised himself at Cambridge, and which are greatly admired wherever they are exhibited. Some of the varieties shown on this occasion were Montrose, a semi-double flower of carmine-pink colour; Jeanie Deans, pale-primrose colour; Amy Robsart, of slightly deeper tint; Lady of the Lake, white; and Guy Mannering, orange-crimson colour, with large stellate flowers in which the strap-like florets are twisted.

Mr. R. Anker, Addison Nursery, Napier Road, Kensington, showed Bougainvillea glabra Sanderiana in flower in 5-inch pots; also plants of Erica persoluta alba, and other Ericas in bloom in "thumb" pots.

Messrs. Gt. Van Waveren & Kruijff, Sassenheim, Haarlem, who showed the extraordinary Astilbes at the Holland Park Show last year, exhibited a group of hybrid varieties, most of which had white flowers, but one named Peach Blossom was pink.

Bomarea edulis variety Elwesii, of which flowers were shown by H. J. Elwes, Esq., had pink-coloured outer segments, with inner segments having green and cream-coloured ground, prettily pencilled with red.

Messrs. Carter & Co., High Holborn, London, in addition to what has been already mentioned, exhibited plants of Verbena Miss Willmott and other varieties, the fine double white Stock Avalanche, also well-flowered Schizanthus, and finely-grown Mignonette, &c.

Messrs. Hugh Low & Co. exhibited a few plants of Metrosideros in flower, also Nicotiana Sanderæ (the deeply coloured variety), Kalanchoe floribunda, Gerbera Jamesoni, Ericas, Pimelea Hendersoni, &c.

Messrs. H. Cannell & Sons, Swanley, exhibited some Phyllocactus in flower, and a few other Cactaceous plants.

Messrs. Watkins & Simpson, Covent Garden, made a very bright exhibit of annual flowering plants, amongst which Clarksias, Nemesias, Collinsia bicolor and the variety alba, French. Dwarf and other Marigolds, Mignonette "Machet," Erysimums, &c., were finely shown.

Mr. T. Jannoch, Dersingham, near Sandringham, furnished the end portion of the central staging in the big tent with a group of Lilacs. They were dwarf plants in small pots, but were profusely furnished with trusses of bloom. The variety Charles Joly is a fine double form of dark colour. Mr. Jannoch also showed a good strain of Lily of the Valley.

FRUIT-TREES IN POTS.

As is customary at this show, Messrs. Rivers & Son, Sawbridgeworth, staged in the large tent a fine collection of fruit trees in pots, having over forty examples. Prominent in the centre was a fine tree some 30 years old of Guigne d'Annonay Cherry heavily fruited, an excellent example showing the age at which pot-trees can be made still productive. All the trees were in rude health, the bulk comprising the new Peregrine and Duke of York Peaches, with two unnamed seedlings and Nectarines Cardinal, Early Rivers, and an early seedling. Other Cherries were May Duke and Early Rivers. Baskets of gathered fruit of Cardinal and Early Rivers Nectarines fronted the group. Staged in a tent and surrounded by groups of rich-flowering plants, a collection of this nature suffered by contrast. That was particularly the case with another group placed at the end of the Orchid groups, which came from H. Heilbert, Esq., Holyport, Maidenhead. The trees in this case were mostly unnamed, and included Peaches, Nectarines, Cherries, and Figs; and there were also well-fruited Vines, Black Hamburgh and Foster's Seedling, three fruiting Pines, one ripe; Melons Pride of Stourbridge and Triumph, and Strawberry Royal Sovereign.

COLLECTIONS OF FRUIT.

The best in this section was a remarkably fine and handsomely-arranged exhibit in one of the long tents, staged by Mr. W. L. Bastin, the able gardener to Sir Alexander Henderson, M.P., Buscot Park, Berks. On elevated stands at the back of the exhibit were fixed Black Hamburgh and Foster's Seedling Grapes, five bunches on each stand, the white one in the centre. On raised dishes were superb fruits of Melons Best-of-All, Hero of Lockinge, British Queen, and Buscot Park Hero. Also Hale's Early and Early Grosse Mignonne Peaches; Elruge, Lord Napier, and Early Rivers Nectarines; Brown Turkey Figs; Governor Wood, Mammoth, and Guigne d'Annonay Cherries; Royal Sovereign Strawberries, and small Wellington Apples.

Messrs. G. Bunyard & Co., Maidstone, set up a remarkable collection in baskets and dishes of not fewer than eighty-two varieties of wonderfully-preserved Apples, and dishes of fine Catillac and Uvedale's St. Germain stewing Pears. The collection was backed by some young trees in pots, well fruited, of Guigne d'Annonay Cherry. Amongst the Apples were Hanwell Souring, Striped Beefing, Smart's Prince Arthur (very conical shaped), Wagener, Murfitt's Seedling, Betty Geeson, Alfriston, Belle Pontoise, Bramley's Seedling, Tower of Glamis, Lane's Prince Albert, Annie Elizabeth, Barnack Beauty, Calville Rouge, Melon Apple, Baxter's Pearmain, Calville Malingre and others.

A collection of three dozen plants in pots of their new Strawberry Bedford Champion came from Messrs. Laxton Bros., of Bedford. The plants were carrying very fine, richly-coloured fruits. The variety has for parentage on the one hand Scarlet Queen × John Ruskin, and on the other Noble × Sir J. Paxton, the immediate parents being seedlings from these crosses. The fruits have both Noble form and some of Cockscomb shape. Baskets of the variety and of Laxton's Reward were also shown.

VEGETABLES.

Cucumbers and Tomatos.—Mr C. Dickings, of Guernsey, sent fourteen dishes of nice Tomatos, the varieties including Challenger, Winter Beauty, Hanwell Gem, Stirling Castle, Hopper No. 1, and Kneller's Prize.

Mr. S. Mortimer, Swiss Nursery, Farnham, set up a high-class collection, having at the back two flat-trained plants in pots of a new Cucumber "Delicacy," heavily fruited, and also a great quantity of very handsome fruits of the variety lying on the table; also other very fine fruits of Peerless, Lord Roberts, Telegraph, and others, some eighty in all. There were in pots finely-fruited Tomatos Winter Beauty, Peach Bloom, Best of All, Princess of Wales, Golden Perfection, and Golden Nugget, and twenty-four dishes inclusive of the varieties named and others.

Collections of Vegetables.—Messrs. Sutton & Sons, Reading, had a singularly pretty, clean, bright collection of thirty-eight dishes of Potatos, including Ninetyfold, Supreme, International, Snowdrop, Satisfaction, Superlative (new), May Queen, Ideal, Up-to-Date, Abundance, Duke of York, Puritan, and several coloured varieties. These tubers were from a planting in frames made on March 1, and the samples were relatively quite large and handsome.

Sir Alexander Henderson, M.P., was also an exhibitor of vegetables, Mr. Bastin having arranged his collection effectively. At the back were a dozen heavily-fruited plants 6 feet in height of the Red Currant variety of Tomato, the racemes of fruit hanging most gracefully down. Facing these were clusters of Sutton's Purity, Magnum Bonum, and First-crop Cauliflowers Tomatos Winter Beauty, Princess of Wales, and Sunbeam; Cucumbers A1, Satisfaction, and Peerless; fine Mushrooms; Tender-and-True and Canadian Wonder Kidney Beans, Snowball and Yellow Perfection Turnips, Early Giant Peas, baskets of Mustard-and-Cress, various Carrots, Radishes, Marrows, and Rhubarb. The joint collection of fruit and vegetables made a fine feature.

The finest collection without doubt was that from the University College, Reading, of which Mr. Charles Foster is the garden superintendent. Backed by numerous well-fruited Tomato plants in pots, with which were interspersed plants of climbing and dwarf Kidney Beans, were some fifty baskets and dishes, including Improved William I., Ideal, Early Giant, May Queen, and Duke of Albany; Peas Telegraph, Every Day; Rochford's Peerless, and Sensation Cucumbers; Centenary, Superlative, Sharpe's Victor, Windsor Castle, Harbinger, and other Potatos. Crimson Cluster, Winter Beauty, and Up-to-Date Tomatos; Earliest and Flower of Spring Cabbages; Early Forcing, Champion, and Early Gem Carrots; First Early Cauliflowers, Long White and Perfection Marrows, numerous Radishes, and other things, all of fine form and great excellence.

Messrs. H. Cannell & Sons, Swanley, had their capital collection backed with Peas Duke of York and English Wonder, flat-trained and heavily podded, in long boxes, fronting them being numerous fine heads of Defiance Cabbage and Model Broccoli. Potatos were very plentiful, including Lord Tennyson, Pink Perfection, The Factor, Eightyfold, Waverley, The Sirdar, King Edward VII., and Fylde Wonder; Cucumbers Favourite and Lockie's Perfection; Long Pod, Exhibition, and Dwarf Little Gem Beans; also diverse Carrots, Kidney Beans, Tomatos, Radishes, and other kinds all effectively arranged.

Messrs. Jas. Carter & Co., High Holborn, had a small collection of excellent vegetables in eighteen dishes, unnamed, including Cucumbers, Cauliflowers, Cabbages, Carrots, Marrows, Kidney Beans, and Radishes.

From the Lady Warwick College, Studley Castle, Redditch, Head of Garden Department, Miss Crooke, came a rather too crowded but very good collection of some forty dishes, including Cabbages, Cauliflowers; Early Giant and Duke of York Peas, Kidney Beans Golden Ball, Early Nantes and Improved Horn Carrots, A1 and Matchless Cucumbers, Supreme Tomatos, Asparagus, Radishes, Lettuces, Potatos, and Spinach.

Mr. A. H. T. de Montmorency, of Dublin, had four dishes of Potatos, very good samples of Sir J. Llewelyn, Royal Kidney, The Scout, and Snowdrop.

In striking contrast were bundles of Asparagus, home and French-grown. The former, stems stout and half-greened, over 12 inches high, came from Mr. R. STEPHENSON, Buswell, Cambridge; whilst from M. A. BETIN, Argenteuil, France, were staged equally long but really huge stems blanched throughout.

Awards.

FIRST-CLASS CERTIFICATES.

Peach "*Peregrine*."—Very handsome, rich-coloured, early, and of fine flavour, raised from Spencer Nectarine. From Messrs. T. RIVERS & SONS.

Cucumber "*Delicacy*."—Fruits long, smooth, short in the heel, very dark green, and very prolific; raised from Matchless × Aristocrat. Shown by Mr. S. MORTIMER, Farnham, Surrey.

AWARDS MADE BY THE COUNCIL.

GOLD MEDALS.

Sir F. Wigan, Bart., for Orchids; Sir A. Henderson, Bart., M.P., for Fruits and Vegetables; Jas. Veitch & Sons for Stove, Hardy and New Plants; F. Sander & Sons for Orchids and Nicotiana; W. Cutbush & Sons for Carnations and Alpines; Paul and Son, Cheshunt, for Roses; Charlesworth & Co. for Orchids; Cripps & Son for Shrubs; Sutton & Sons for Greenhouse Plants; Wallace & Co. for Alpines and Lilies.

SILVER CUPS.

Frank Lloyd, Esq., for Begonias; S. Heilburt, Esq., for Fruit; J. Coleman, Esq., for Orchids; W. James, Esq., for Carnations; J. Cypher & Sons for Orchids; Rd. Smith & Co. for Clematis; H. Cannell & Sons for Cannas and Vegetables; Barr & Sons for Alpines; G. Bunyard & Co. for Fruit and Hardy Plants; J. Peed & Sons for Caladiums; R. & G. Cuthbert for Hardy Azaleas; J. Cheal & Sons for Alpines; Wm. Paul & Sons, Waltham Cross, for Roses; Rivers & Son for Fruits; Hill & Sons for Ferns; H. B. May for Ferns and Flowers; Ware, Ltd., for Herbaceous Plants and Begonias; Reading College for Vegetables; Chas. Turner for Roses; A. J. Bruce for Sarracenias; J. Backhouse & Son for Alpines; M. Prichard for Alpines; F. Cant & Co. for Roses; G. Mount for Roses.

SILVER-GILT FLORA MEDALS.

J. Carter & Co. for Flowers and Vegetables; L. R. Russell for Shrubs, &c.; J. Laing & Sons for Gloxinias and Begonias; Dobbie & Co. for Hardy Plants; Hugh Low and Co. for Carnations, &c.; Fisher, Son, & Sibray for Shrubs; B. Cant & Sons for Roses; J. Waterer & Sons for Rhododendrons; Jackman & Sons for Hardy Plants; R. Sydenham for Sweet Peas; W. Bull & Sons for Orchids; Blackmore & Langdon for Begonias; R. C. Notcutt for Hardy Plants; Amos Perry for Hardy Plants; D. Russell for Trees and Shrubs; Hobbies, Ltd., for Roses, &c.; R. Irwin Lynch, Esq., for Gerberas.

SILVER-GILT KNIGHTIAN MEDALS.

S. Mortimer for Cucumbers and Tomatos; Laxton Bros. for Strawberries.

SILVER-GILT BANKSIAN MEDALS.

W. J. Godfrey for Hardy Flowers; H. J. Jones for Hardy Flowers; Hogg & Robertson for Tulips; Alex. Dickson & Sons for Tulips; "Bakers," Wolverhampton, for Hardy Plants; Geo. Reuthe for Hardy Plants; W. Iceton for Lily of the Valley.

VEITCHIAN GOLD CUP, Value £52 10s.

Messrs. T. Cripps & Son for Shrubs and Trees.

SILVER FLORA MEDALS.

E. Ascherson, Esq., for Ferns; John Rutherford, Esq., M.P., for Orchids; E. Wagg, Esq., for Carnations; Lord Aldenham for Flowering Trees and Shrubs; Jones & Son for Sweet Peas, &c.; Watkins & Simpson for Annuals; John Robson for Orchids; A. F. Dutton for Carnations; Kelway & Son for Hardy Herbaceous Plants; S. F. Stanley & Co. for Orchids.

SILVER KNIGHTIAN MEDALS.

A. J. Harwood for Asparagus; Lady Warwick's College for Vegetables; Hon. A. H. T. de Montmorency for Tulips; Charles Ritchings for Tomatos.

SILVER BANKSIAN MEDALS.

T. H. Lowinsky, Esq., for Calceolarias; A. Belin for Asparagus; Wm. Sydenham for Violas; B. S. Williams & Son for Hardy Cut Flowers; C. W. Breadmore for Sweet Peas, &c.; H. C. Pulham for Alpines; R. Farrer for Alpines; Guildford Hardy Plant Co. for Alpines; R. H. Bath for Carnations, &c.; T. Jannoch for Lilies of the Valley; W. Fromow & Sons for Maples; A. Ll. Gwillim for Begonias.

BRONZE KNIGHTIAN MEDAL.

R. Stephenson for Asparagus.

ROYAL CALEDONIAN HORTICULTURAL.

EDINBURGH, MAY 24 AND 25.—The show as a whole was somewhat thin. The date, though perhaps satisfactory from a financial point of view, being unsuitable for a variety of garden produce, and gardeners as a rule do not seem to have taken to it. During the afternoon of the first day the attendance was eminently satisfactory, the Lord High Commissioner to the Assembly of the Church of Scotland, Lady Leven and Melville, Lord Balfour of Burleigh, the Countess of Eglintoun, Lord and Lady Binning, and others of the Scottish nobility and gentry visiting the show, while the general public also attended in considerable numbers.

The great feature of the show was undoubtedly the fine bank of Orchids staged in competition for Mr. Brooman White's prize, which was worthily won by Mr. Sharp, gr. to C. L. WOOD, Esq., Freelands, Forgandenny. Odontoglossums were conspicuous, both with regard to the varieties staged and the culture displayed. Stove and Greenhouse plants were moderately well shown, but among them were none of outstanding merit. Among other plants were good displays of Calceolaria, Lily of the Valley, Hoteias, Cinerarias, Alpine plants and Ferns, the groups being largely brought from gardens in the vicinity of Edinburgh. Of fruit there were dishes of good Strawberries and a collection of Australian Apples. Cut flowers were by no means numerous, the finest of these being the Roses, Mr. PARLANE as usual being prominent with lovely blooms of Ulrich Brunner, Charles Lefebvre, Margaret Dickson, Mrs. S. Crawford, Lawrence Messimy and others.

Mr. CUMMING, Grandtully, showed some specially fine early Tulips in the classes for these flowers; while for stove and greenhouse flowers, Mr. MCINTYRE, The Glen, Innerleithen, was the chief prize-winner.

A bride's and an ordinary bouquet from Mr. PERKINS, Leamington, were easily 1st in the classes for these subjects. The same exhibitor also secured several minor prizes.

VEGETABLES as usual formed an interesting feature, Mr. Kidd, gr. to Lord ELPHINSTONE, Carbery Towers, securing 1st for a collection. Mr. MACKINLEY, Wrest Park, Beds., was 2nd.

TRADE EXHIBITS.

These, as is usual at Edinburgh, formed a notable feature of the show, but were perhaps less in extent than at last year's show. Both Messrs. R. B. LAIRD & SON, Pinkhill, and Messrs. DICKSONS & Co., Craigmillar, arranged particularly handsome groups, the former having as a *motif* a Japanese cottage with flowering and foliage plants trained over it, and extending around it. The latter firm restricted their grouping to the usual order of handsome flowering and foliage plants, Blush Rambler, Dorothy Perkins, Crimson Rambler, and many other Roses contributing greatly to the good effect. Wonderfully fine too was the extensive exhibition of Tulips from Messrs. HOGG & ROBERTSON, Dublin, even surpassing the display made by the same firm last year. Scotch-grown Tulips appear mere pigmies to these Irish-grown flowers.

Attractive rockeries were arranged by a North of England firm, in which Euphorbia pilosa major was well shown; and by Messrs. CUNNINGHAME, FRASER & Co., Comely Bank, Edinburgh, whose display contained a large number of first-rate alpines, Mr. Lindsay's seedling Saxifraga "Dr. Ramsay," to which a First-class Certificate was awarded, being a conspicuous object. Mr. YOUNG, Elgin, also showed alpines, among which Primula scotica was presented in great beauty.

Mr. RUSSELL, Richmond, delighted Scottish gardeners with a group of Clematises in small pots; and among other contributions those of Mr. JOHN FORBES, Hawick, and Messrs. DOBBIE & Co., Rothesay, contained a variety of florists' flowers not usually seen at this time of year. A Cultural Certificate was awarded to Mr. CAIRNS, gr., Balruddery, Dundee, for seedling Amaryllis.

Obituary.

JOHN HUNGERFORD ARKWRIGHT. — The death of this well-known amateur horticulturist is reported, in his seventy-second year. Mr. Arkwright lived at Hampton Court, Herefordshire, and the fine variety of Primrose named "Evelyn Arkwright," which was illustrated in these columns, on May 7, 1898, p. 276, was, we believe, first exhibited by him. He was an occasional contributor to this Journal.

ROBERT MENZIES DEWAR. — Many of our readers will learn with regret of the death, on May 16, of this promising young gardener at the early age of thirty-one. A native of Perthshire, he served his apprenticeship in that county, and then went to Castle Craig, Peebleshire, and from thence to Yorkshire and Derbyshire. He became head gardener to the Hon. T. Dundas, of Ainderby Hall, Yorks, in 1898, and remained there till 1903. He showed excellent Chrysanthemum blooms at the York and Darlington shows of 1900, 1901, and 1902, where he gained several prizes, also the Gold Medal for the best bloom at Darlington. Deceased left Ainderby Hall in April, 1903, with the intention of obtaining a larger charge, much to the regret of his master. He went to Messrs. Backhouse's Nursery at York, and it was there that he was seized with what proved to be a fatal illness. He leaves a widow and one little daughter to mourn his loss.

MARKETS.

COVENT GARDEN, May 31.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldi, p. dozen	4 0- 6 0
Araucaria excelsa, per dozen ...	18 0-30 0
Aspidistras, green, per doz. ...	24 0-36 0
— variegated, per doz. ...	30 0-42 0
Azalea indica, doz.	18 0-30 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0
— Sprengeri, doz.	6 0- 9 0
— tenuissimus per doz. ...	8 0-10 0
Bedding plants, store boxes, each	1 0- 1 6
Begonias, tuberous, per doz.	6 0- 9 0
Boronia elatior, per dozen ...	12 0-24 0
Calceolarias, yellow, per dozen .	4 0- 9 0
— herbaceous, per dozen ...	6 0- 8 0
Calla æthiopica, per doz. ...	4 0- 6 0
Cannas, per doz.	5 0- 6 0
Chrysanthemum coronarium, double yellow, per dozen ...	8 0-10 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	12 0-30 0
Cyperus alternifolius, p. doz.	3 0- 5 0
— laxus, p. doz.	3 0- 4 0
Dracænas, p. doz.	9 0-24 0
Ericas, per doz....	12 0-30 0
Euonymus, dozen	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
Ferns, in 32's, doz.	12 0-24 0
— hardy roots ...	1 0- 2 0
Ficus elastica, p. doz.	9 0-12 0
— repens, p. doz.	5 0- 8 0
Fuchsias, p. doz.	5 0- 8 0

	s. d. s. d.
Heliotropes, doz.	4 0- 5 0
Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
— Hortensia, p. dozen	8 0-12 0
— paniculata ...	12 0-18 0
Kalosanthes, doz.	10 0-12 0
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Lobelia, per. doz.	4 0- 5 0
Latania borbonica, per doz. ...	12 0-18 0
Lilium Harrisi, per dozen ...	12 0-24 0
Marguerites, white, per dozen ...	6 0-10 0
— yellow, dozen	12 0-18 0
Mignonette, doz.	5 0- 8 0
Musk, Harrison's, per dozen ...	3 0- 4 0
Pansies, per box....	1 0- 2 6
Pelargoniums, per doz., Show .	9 0-12 0
— Ivy-leaved ...	6 0- 8 0
— zonal	4 0- 6 0
— scarlet do. ...	4 0- 5 0
Petunias, double, per dozen ...	5 0- 6 0
Rhodanthe, per dozen	4 0- 5 0
Rhododendrons, per dozen ...	24 0-30 0
Roses, H.P.'s, per dozen	9 0-18 0
— Crimson Rambler (large), each	3 6- 7 6
Saxifraga pyramidalis, per doz.	12 0-15 0
Selaginella, doz.	3 0- 5 0
Spiræa japonica, per doz. ...	4 0- 9 0
Stocks, Intermediate, per doz.	4 0- 6 0
Verbena, Miss Willmott, per dozen	9 0-12 0
— scarlet, p.doz.	8 0-10 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Azalea mollis, p. dozen bunches .	6 0- 9 0
Bouvardia, per doz. bunches	6 0- 8 0
Calla æthiopica, p. doz. blooms	2 0- 3 0
— Elliottiana ...	12 0-18 0
Carnations, p. dz. blooms, best American vars.	2 6- 5 0
— smaller do. ...	1 0- 2 0
— Malmaisons ...	8 0-12 0
Cattleya, per doz. blooms	10 0-12 0
Dendrobium nobile, per dozen blooms	1 6- 2 0
— Wardianum ...	1 0- 2 0
Eucharis grandiflora, per dozen blooms	2 6- 3 0
Gardenias, per dz. blooms	0 9- 1 0
Gladiolus Colvillei, per bunch ...	1 0- 1 6
Gypsophila, per dozen bunches	3 0- 6 0
Iris, Spanish, per doz. bunches	2 0- 3 0
— best English grown, bunch of 12 flowers	1 0- 1 3
Lilac, per bunch .	0 9- 1 6
Lilium auratum, per bunch ...	2 6- 3 0
— candidum ...	1 0- 1 6
— lancifolium, rubrum and album... ...	2 0- 3 0
Lilium longiflorum ...	1 6- 2 6
— tigrinum ...	2 0- 2 6
Lily of the Valley, dozen bun. ...	6 0-12 0
Marguerites, white, doz. bunches	3 0- 4 0
— yellow; dz. bun.	2 0- 4 0

	s.d. s.d.
Mignonette, doz. bunches ...	4 0- 6 0
Narcissus, per doz. bunches, Pheasant's Eye	1 0- 2 0
— double white.	2 6- 3 0
Odontoglossum crispum, pr. dz. blooms	1 6- 2 0
Pæonies, dz. bchs.	2 0- 4 0
Pelargoniums, p. doz. bnchs.	
— Show	4 0- 6 0
— Zonal, double scarlet ...	4 0- 8 0
— salmon & pink	4 0- 6 0
Poppies, Iceland, doz. bunches	4 0- 6 0
— Oriental, doz. bunches ...	6 0- 9 0
Pyrethrum, doz. bunches ...	2 6- 4 0
Rhodanthe, doz. bunches ...	3 0- 4 0
Roses, 12 blooms, Niphetos ...	1 0- 3 0
— Bridesmaid ...	2 0- 4 0
— Kaiserin A. Victoria ...	2 0- 4 0
— General Jacqueminot ...	1 0- 2 0
— C. Mermet ...	2 0- 3 0
— Caroline Testout	2 0- 4 0
— Liberty ...	2 0- 4 0
— Mad. Chatenay	4 0- 6 0
— Mrs. J. Laing .	2 0- 4 0
— Sunrise ...	1 6- 2 6
Stephanotis, doz. trusses ...	1 6- 2 6
Sweet Peas, doz. bunches ...	3 0- 5 0
Tuberoses, per dozen blooms	0 3- 0 9
Tulips, doz. bun.	6 0-12 0
— special varieties	10 0-12 6

Fruit: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Apples, p. barrel	18 0-20 0	Grapes, Almeria, dozen lb. ...	8 0 —
— Victorian and Tasmanian, p. case	9 0-14 0	— Australian, p. box	17 6-20 0
Apricots, French, per box ...	0 9- 1 6	Lemons, per case	7 6-14 6
— — per case ...	3 0- 3 9	Mangos, per doz.	6 0-12 0
Banana, bunch ...	6 0-14 0	Melons, each ...	1 3- 3 0
— loose, per doz.	1 0- 1 6	Nectarines, A., p. dozen	7 0-12 0
Cherries, per half bush.	5 6- 7 6	— B., per dozen	2 0- 5 0
— per box ...	1 0- 2 0	Oranges, per case	15 0-50 0
Figs, per dozen ...	2 6- 8 0	— Murcia, case	12 0-18 0
Gooseberries, per half-bushel ...	4 0- 5 0	— Valencia, case	16 0-36 0
Grapes, Alicante, per lb. ...	1 6- 2 0	Peaches, doz., A.	8 0-15 0
— Hambro, lb.	1 3- 3 0	— „ B.	2 0- 6 0
— Muscats, p. lb.	2 6- 4 0	Pines, each ...	2 6- 5 0
		Raspberries, p. lb.	4 0 —
		Strawberries, A., lb.	1 6- 2 6
		— — B., per lb...	0 9- 1 3

Imported Flowers: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Anemones, per doz. bunches, coronaria ...	2 0- 3 0	Freesias, per doz. bunches ...	3 0- 4 0
— fulgens ...	2 0- 3 0	Ixias, per dozen bunches... ...	2 6- 3 0
Carnations, per doz. bunches ...	9 0-12 0	Marguerites, per doz. bunches ...	2 0- 3 0
Fern, French (Asplenium adiantum nigrum), p. dozen bunches	6 0 —	Roses, per basket	4 0- 5 0
		Stocks, double white and pink, dozen bunches	3 0- 4 0

Foliage: Average Wholesale Prices.

	s.d. s.d.		s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6- 0 9	Fern, English, p. dozen bunches	2 0- 4 0
— — medium, each ...	0 4- 0 6	Ivy-leaves, bronze	1 6- 2 0
— — short sprays per bunch...	1 0- 2 6	— long trails, per bundle ...	1 0- 2 0
— Sprengeri ...	0 9- 1 6	— short green, doz. bunches	1 0- 1 6
— tenuissimus..	9 0-12 0	Moss, per gross...	5 0- 6 0
Adiantum cuneatum, per dozen bunches... ...	4 0- 6 0	Myrtle, doz. bun.	3 0- 4 0
Cycas leaves, each	1 6- 2 0	Smilax, p. dozen trails	4 0- 6 0
		Hardy foliage (various), per dozen bunches	3 0- 4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, Globe, per dozen ...	2 0- 4 0	Onions, Egyptian, per cwt. ...	6 0 —
Asparagus, bunch	0 6- 5 0	— Spring, dozen bunches ...	6 —
— Giant	5 6- 7 6	Parsley, per doz. bunches... ...	1 6- 2 6
— English giant	4 0- 6 0	Peas, French, per packet ...	0 3- 0 4
— ordinary, per bunch... ...	0 10-2 3	— Frame, per lb.	0 6-0 10
— Toulouse, bch	0 10-1 0	— Flats	3 6- 4 6
Beans, dwarf, per lb.	0 8-0 10	— English, bus.	8 0-12 0
— Channel Island	0 9-0 10	Potatos, per ton	60 0-70 0
— English, p. lb.	0 9-0 10	— Frame, lb. ...	0 2½ 0 3
— Broad, p. pad	3 0- 4 0	— Teneriffe, cwt.	10 0-12 0
Beetroot, bushel	2 6- 3 0	— Jersey, p. cwt	13 6-14 0
Cabbages, p. tally	2 6- 5 0	— St. Malo, per cwt.	11 6-12 0
Carrots, new ...	6 0 —	— Cherbourg, p. cwt.	9 0-11 0
— bag	6 0 —	Radishes, p. doz. bunches ...	1 0- 1 6
Cauliflowers, doz.	2 6- 3 0	Rhubarb, York, per dozen ...	2 0- 3 0
Cress, doz. pun.	1 0 —	— Natural, doz.	2 0- 4 0
Cucumbers, doz.	1 6- 3 0	Spinach, bush. ..	1 0- 1 6
Endive, per doz.	1 6- 2 0	Tomatos, bundle	18 0-20 0
Greens, bushel ...	0 9- 1 0	— English, p. lb.	0 6- 0 7
Horseradish, per doz.	8 0-10 0	— Jersey, p. lb.	0 6- 0 7
Mint, per dozen...	2 0- 3 0	— Valencia, case	10 0-12 0
Leeks, per dozen bundles... ...	4 0- 6 0	Turnips, new, doz. bun.	4 0- 6 0
Lettuces, Cabbage, per dozen ...	0 9 —	Vegetable Marrows	0 6- 0 9
— English, Cos, per dozen ...	0 9- 1 0	Watercress, per doz. bunches.	0 5- 0 6
Mushrooms (house) per lb.... ...	0 9- 1 0		

REMARKS.—A consignment of Mangos arrived this week, and were sold at an average price of from 6s. to 12s. per dozen; also a novelty from the West Indies called Mammee Fruit. Strawberries have become a glut on the market on account of the hot weather, consequently prices are very low. The fruits are of medium quality. Bananas of an inferior kind are plentiful, but good fruit is very scarce indeed. Owing to the sudden spell of hot weather Bananas ripened very quickly on the journey, and arrived in an over-ripe condition. Pines are a little cheaper, but there are very few of these fruits arriving. Supplies of South Australian Apples are now nearly finished, but supplies are still arriving from Tasmania.

POTATOS.

Dunbars, 80s. to 90s.; various, home-grown, 60s. to 70s. per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

POT PLANTS.

THE market commands a brisk trade for all pot plants, but prices do not rise owing to increased supplies; in fact, the time has quite passed when high or fancy prices are made. Ivy-leaved Pelargoniums are much in demand. In addition to well-known varieties there are seen Baden-Powell, Leopard, and the distinct pink "Achievement." Ryecroft Surprise, which a few years ago was a favourite, seems to have quite gone out of fashion. Zonal Pelargoniums in various colours are in demand for decorative purposes. Yellow Calceolarias are of good quality, as are also the herbaceous varieties. Stocks are still procurable. The demand for Lobelia Emperor William does not seem equal to that of previous years. Good plants of Digitalis (Foxglove) in the best spotted varieties are seen. Hydrangea paniculata grandiflora is now arriving. Some plants are of good quality, while others are thin in substance and "leggy." Fuchsias are over plentiful and low in prices. Good Spiræas can be had, also Lilium Harrisi. The yellow Chrysanthemum segetum (or coronarium variety) in both single and double forms are good. I find growers now propagate these plants from cuttings instead of growing them from seeds, the result being the production of dwarfer plants that flower earlier.

CUT FLOWERS.

Hardy flowers are now marketed in large quantities, such things as Pæonies and Pyrethrums are sent in large waggonloads. The trade in Pæonies is very great. The best flowers of pink and other good shades sell well, but others are sold at very low prices. Lilium longiflorum is seen in large quantities in the street, an indication of the cheapness of these flowers. Iceland Poppies are now plentiful, Oriental and Shirley Poppies are also seen. Sweet Peas are abundant, but many have too short stems to be useful for decorative purposes. Long stems are of greater importance in flowers than ever. Roses on long stems continue plentiful; some good blooms of Mrs. W. J. Grant are seen; also Karl Druschki; but I doubt if the latter will prove a profitable Rose to grow in large quantities. There has been a much better demand for Roses and Carnations. On Monday morning there were very few really good Carnations left for sale at 7 o'clock. Spanish Iris, Gladioli The Bride, Blushing Bride, and some brenchleyensis are obtainable in quantity. Gardenias are over plentiful, and sell badly, as do Stephanotis. Double White Narcissus will be over in a few days. *A. H., Covent Garden, May* 31.

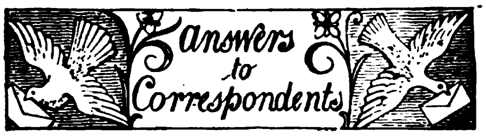
SCHEDULES RECEIVED.

READING AND DISTRICT ROSE SOCIETY.—The Annual Exhibition of Roses by the above Society will be held in the Forbury Gardens, Reading, on June 29.

READING HORTICULTURAL SOCIETY.—The date of the Summer Show is fixed for August 30, and it will be held as usual in the Forbury Gardens. The Secretary *pro. tem.* on both occasions is Mr. William Smith, London Street, Reading.

BOSTON HORTICULTURAL SOCIETY.—This Exhibition will be held on July 19. The secretaries are Messrs J. G. Killingworth & Son, Market Place, Boston.

STOCKPORT AND DISTRICT CHRYSANTHEMUM, Flower and Fruit Show, to be held in the Volunteer Armoury, Stockport, on Friday and Saturday, November 10, 11, 1905.



Answers to Correspondents

*** EDITOR AND PUBLISHER. — Our Correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all communications relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication, or referring to the Literary department, and all plants to be named, should be directed to the EDITOR. The two departments, Publishing and Editorial, are quite distinct, and much unnecessary delay and confusion arise when letters are misdirected.

CROSSING CARNATIONS: *Carnation.* In many species of plants, and particularly in hybrids, it is not uncommon for the flower to develop the ovary, and apparently perfect this organ, and yet produce no fertile seeds. That the ovary swelled in the manner you have described may be due to pollen you applied, or to the slight irritation you occasioned, but as there were no seeds developed, this is sufficient proof that no actual fertilisation took place. Try again, and again if needs be, and you will doubtless succeed, taking care to apply the pollen when "ripe," and when the stigmatic surface is in a proper condition for receiving the pollen.

FUNGUS: *J. D. C.* The specimen was putrid on arrival.

FUNGUS TAKEN FROM TOMATO SAUCE: *H. Slade.* The substance is the mycelium or spawn of the common blue-mould, Penicillium glaucum; the spores of this fungus are present everywhere in the atmosphere, and some had fallen on the sauce after boiling and before sealing up.

GRAPES DISEASED: *P. J. S.* The berries are affected with the "spot" disease, Glœosporium ampelophagum. Remove and burn all diseased Grapes, and spray the remainder with liver-of-sulphur in the proportion of ½ oz. to a gallon of water.

HOLLYHOCK AND PEACH DISEASES: *Derwydd.* The Hollyhocks are affected with a fungus disease—Puccinia malvacearum. For treatment, see answer to *Salop* in our last issue. The Peach leaves are also attacked by a fungus—Exoascus deformans or Peach Blister. You will find particulars, with illustration, on p. 294 of our issue for May 13, 1905.

NAMES OF PLANTS: *A. T.* 1, Doronicum austriacum; 2, Pteris tremula; 3, Salvia sp. (send when in flower); 4, Chlorophytum elatum variegatum; 5, Pteris serrulata cristata; 6, P. umbrosa.—*J. P. S.* Prunus Padus.—*G. Geddes.* Scilla hispanica.—*Max Leichtlin.* probably Crambe Kotschyana.—*A. H. Gibbins, Johannesburg.* Probably Gnidia sp. or some other Thymelaceous plant, so far as can be determined in the absence of flowers.—*F. E. S.* 1, Phacelia tanacetifolia; 2, Veronica gentianoides; 3, Pyrus intermedia.—*H. C.* We do not recognise the variety. Send to a grower of these plants.—*W. W. N. B.* Varieties of Gloriosa grandiflora (syn. Methonica grandiflora) and G. Leopoldi. The specimens are interesting as showing a transition between G. superba and G. virescens. We cannot name the Ipomœa.—*F. W. S.* 1, Pyrus Aria var.; 2, Cedrus Deodara.—*A. B. R.* 1, 2, 3, 4, 5, 6, not found; 7, Lithospermum prostratum; 8, Cerastium vulgatum; 9, Androsace lanuginosa; 10, Acer polymorphum variety; 11, Silene inflata; 12, Onosma echioides.—*G. C.* Prunus Padus.—*W. G. S.* Ribes speciosum.—*W. E. T.* Cercis siliquastrum; look again and see how widely it differs from a Pyrus flower.—*A. Y. L.* Lælia purpurata.—*A. L. P.* 1, Dendrobium aggregatum; 2, spotted Trichopilia tortilis; 3, Cupressus sempervirens.—*D. S. T. & Sons.* Aralia dactylifera.

ORANGE-RUST ON ROSES: *C. A. Whitehouse.* The appearance is due to a troublesome pest called Phragmidium subcorticatum. The appearance of the disease in spring depends on the presence of resting spores from the previous autumn. Spraying with diluted Bordeaux-mixture or ammoniated carbonate of copper at intervals during the summer will check the disease. The fungus also grows on wild Roses, and these may become a source of infection unless precautions are taken.

PALM: *L. W. F.* There is no fungus disease present. The appearance suggests injury from an insecticide applied too strongly.

TOMATO DISEASED: *E. R.* and *W. B.* Your plants are attacked with Phytopthora, the same fungus that causes the Potato disease. Burn the diseased plants, and syringe the healthy plants once in three days with weak Bordeaux-mixture, ceasing to do so as the fruit ripens.

VINES: *A. R. S.* There is no disease present in the leaves you send. They are suffering from the effects of a check. We suspect the trouble is to be found in the borders, which have probably been kept either too dry or too wet. Cold draughts would also be sufficient to cause the appearance.

WATER SUPPLY: *J. C., Perplexed.* The analysis you give of No. 2 (from the service mains) appears to be more suitable for your plants than No. 1. We suspect the reason the Cucumbers curl when in a young state is that they receive a check, and we suggest that the water is too cold from the service mains. Can you not run the service water into a tank in the house, so that it may be warmed before it is applied to the plants?

COMMUNICATIONS RECEIVED.—Col. P.—R. & H.—K. D.—F. Borowski—M. H. S.—A. D.—J. F. D.—A. H.—T. C.—W. W. N. B.—R. P. B.—H. Gussow.—R. P. B.—T. G.—J. G. W. (next week)—Sir Daniel Morris—H. J. W.—Société Néerlandaise d'Hort. et de Bot.—J. C. & Co.—S. & S.—F. M.—H. C. & Sons (next week)—The Cape—W. K.—G. W.—E, H. J.—F. J.—A. W.—T. S.—C. A. B. Warwick—W. M.—J. W. M.—J. H. E.—J. J. W.—E. C.—A. C.—W. W.—L. B.—D. R. W.—F. B. (no letter enclosed with peat).—C. T. D.—Chloris.

Many communications are of necessity held over.

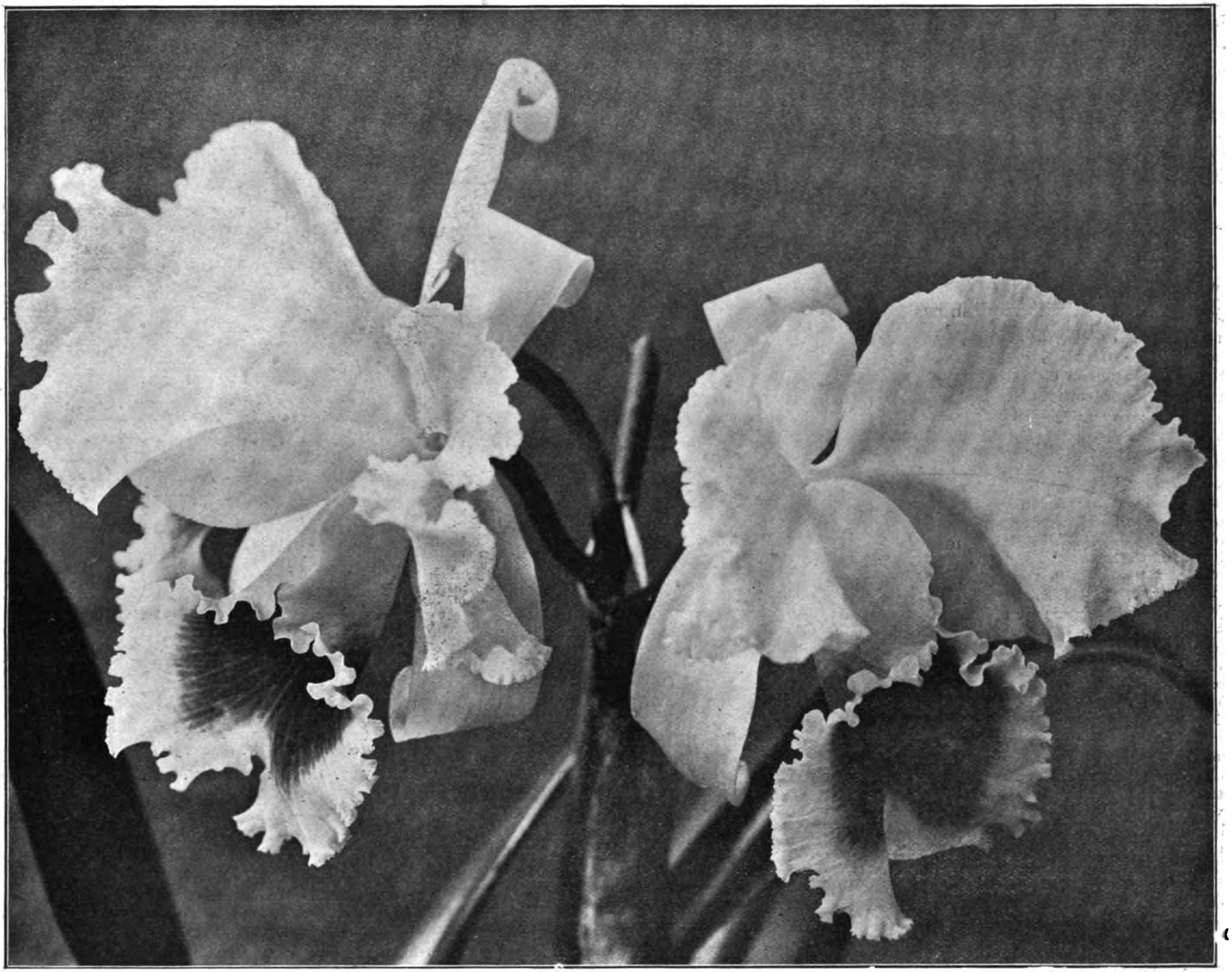
ROYAL HORTICULTURAL SOCIETY.

THE TEMPLE SHOW.

MAY 30, 31, & JUNE 1.

(*See also pp.* 344 *and* 345).

THE Show which closed yesterday in the gardens of the Inner Temple, Thames Embankment, London, was the eighteenth of the series, and, as we have said elsewhere, it was one of the very best. The weather on the opening day (Tuesday) was indifferent, the dull skies of the morning were followed in the afternoon by a thunderstorm, accompanied by a heavy downpour of rain, which caused the visitors much discomfort. Nevertheless, the receipts at the gates on that day were up to the average. In order to obtain greater convenience in passing through the long, narrow tent which ran parallel with the Embankment, the side stages were made a little less wide than heretofore; but in spite of this the congestion was very great, and the atmosphere towards the centre of the tent most depressing. Such a show as this annual display occasions an enormous amount of extra work on the part of the Society's officials, and we join in the gratitude of our readers for the trouble taken by the Secretaries, also by Mr. S. T. WRIGHT and Mr. FRANK READER, to ensure that the arrangements should be as convenient as it is possible to have them. How difficult their task has been may be inferred from the fact that whilst 21,000 feet of space were applied for, only 12,000 could be allotted.



[*Photograph by J. Gregory.*

FIG. 142.—CATTLEYA SCHRÖDERÆ "THE BARON": THE ACKNOWLEDGED GEM OF THE TEMPLE SHOW, EXHIBITED BY MESSRS. SANDER AND SONS. (SEE P. ii.)

ORCHIDS.

The members of the Committee were in full force, though the number of novelties submitted were only about thirty. The quality of the large display of Orchids from the various exhibitors was at least equal to that of any former show, even the plants used to fill in the groups being well worthy of the show stand; and the arrangement, especially in the four leading groups—viz., those from Sir FREDERICK WIGAN, Bart., JEREMIAH COLMAN, Esq., Messrs. SANDER & SONS, and Messrs. CHARLESWORTH & Co.—were excellent. These four large groups formed the bulk of the exhibits in the large Orchid-tent.

First came that of Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen (gr., Mr. W. H. Young), who staged a magnificent group, the fine varieties of Lælia purpurata, Cattleya Mossiæ and other showy favourites being also well represented. From the back there appeared graceful sprays of various Oncidiums and Odontoglossums, the large flowers of the purple Sobralia macrantha and its variety alba, one specimen of which had sixteen flowers and buds; Sobralia × Viganæ, one of the handsomest, and other varieties. Along the group at intervals were effective arrangements of Miltonia vexillaria, each batch being composed of distinct types. The dominating specimen in one set was a fine specimen of M. vexillaria "Empress Victoria Augusta" with four spikes; and of another the purple-centred M. v. "Memoria G. D. Owen." The Odontoglossums had for their best O. crispum "Albion," O. c. guttatum variety, O. nebulosum pardinum splendens (very fine), O. × ardentissimum, O. × loochristyense, O. × elegantius, O. × concinnum, O. × amabile, and O. × Harryano-triumphans. Of Lælias and allied plants, were noted Lælia Boothiana (with three spikes). L. purpurata "The Pearl," Backhousiana and Russelliana, L. × cinnabarosa, Lælio-Cattleya × Hebe, Fascinator and its fine variety dulcis, L.-C. × Myra magnifica, L.-C × G. S. Ball, L.-C. × J. F. Birckbeck, L.-C. × Digbyano-Mossiæ, and other hybrids. Cattleya Mossiæ "Lady Wigan," a charming variety, bore ten fine flowers; C. M. Wagneri, five flowers, and others were equally good. The Cypripediums were represented by good C. bellatulum, and its white variety; C. Godefroyæ leucocheilum, C. Stonei candidum, the distinct C. × W. H. Young, a handsome form of C. Mastersianum and others. Brilliant Masdevallias brightened the group, and of things not frequently seen were noted Aërides Fieldingii, Brassia brachiata, Cymbidium Devonianum, C. tigrinum, Cœlogyne pandurata, the singular little Eria extinctoria, Tetramicra bicolor, various Phalænopsis, &c. There were eighteen genera, thirty-nine species, nine varieties and eighteen hybrids, represented by the best types of each.

JEREMIAH COLEMAN, Esq., Gatton Park (gr. Mr. W. P. Bound), had a very fine group effectively set up with Palms, &c. At each end at the back were clumps of the rich orange-scarlet Epidendrum × Boundii, and between them Cymbidium Lowianum and its variety concolor. Throughout the culture of the plants was excellent, and especially in the case of the Odontoglossums, one huge specimen of O. crispum with four spikes, grown from a single bulb in two years, securing for Mr. Bound a Cultural Commendation. Of fine varieties, O. crispum Rosy Queen had blush-white flowers; O. c. Mrs. J. Colman was finely blotched; O. c. Margery Tyrrel Giles, blush-white with small spotting of purple, and others, were of a good type. Lælia purpurata Gatton Park variety had a fine veining of rose-purple; L. majalis bore two fine flowers; Vanda Denisoniana had a fine spike of white flowers; Cattleya Mossiæ varieties, including forms of C. M. Reineckiana, and other whites were good; C. Skinneri and its variety alba were well shown, and the group was brightened by scarlet Masdevallias, Cochlioda Noezliana, Spathoglottis aurea Gatton Park variety (the best bright yellow), and other showy kinds. Noteworthy also were Cattleya intermedia cœrulea Gatton Park variety, Cattleya Mossiæ Dormaniana, Cymbidium × Lowio-eburneum giganteum, and Odontoglossum × Andersonianum Colmani.

J. RUTHERFORD, Esq., Blackburn (gr., Mr. Lupton), staged a small group of Odontoglossums, varieties of Cattleya Mossiæ, including the nearly white variety "Sir Alfred Milner," C. M. Rappartiana, and two varieties of C. M. Reineckiana; also Miltonia vexillaria and its variety Luptoni.

ED. ROBERTS, Esq., Eltham, showed a good selection of Cypripedium bellatulum, C. Godefroyæ leucocheilum, C. glaucophyllum, and a fine Cattleya Mendeli.

J. FORSTER ALCOCK, Esq., Northchurch, showed a small lot of Odontoglossums, including some spotted varieties flowering for the first time.

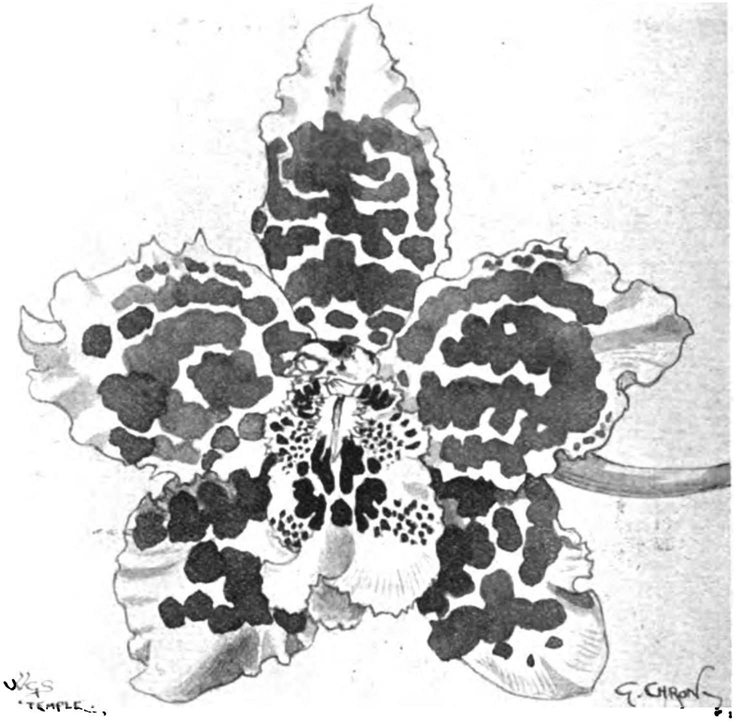
NURSERYMEN.

Messrs. SANDER & SONS, St. Albans and Bruges, staged a magnificent group occupying 200 square feet, splendidly arranged, and made up of nothing but plants of the highest order in each section. Their central plant, Cattleya Schröderæ "The Baron," named in honour of the respected orchidist Baron Schröder, was generally pronounced to be *the* plant of the show (see fig. 142). It was a model in form, with white sepals and petals, the large disc of the lip being of a glowing rosy-orange tint, shading off to violet towards the broad, white, crimped margin. C. Schröderæ "Princess Ena" was also fine, it being blush-white, with a bluish-purple blotch on the lip. In the centre was a selection of grand forms of Odontoglosum × ardentissimum, some much like good blotched O. crispum, while others had most of the segments occupied by the rich purple blotching. Some of the best were O. × ardentissimum punctatissimum, O. × a. splendens, and O. × a. Her Majesty. The O. crispum were uniformly good, the best noted being O. crispum Semontianum, O. c. leopardinum, O. c. punctatissimum, and some new unnamed spotted varieties, one very singularly marked form being near to O. c. Kinlesideanum. Hybrid Odontoglossums were well represented, one clump having a fine set of O. × Wilckeanum, the best being the variety imperialis, and other sections were of the O. × Rolfeæ and O. × crispo-Harryanum class raised at Bruges, together with other hybrids. The selections of Cattleyas were rich in white forms of C. Mossiæ, including Reineckiana and Wageneri, of which latter C. W. xanthina had a rich orange lip. C. Mossiæ Cooksoniæ was a grand white flower; C. M. Fascinator, a pretty flower of the Arnoldiana class; and C. M. Fairy Queen, the whitest of all, there being little of the yellow colour usually seen in the lip. C. M. Empress of India was a fine, highly-coloured form, and the white C. × Mrs. Myra Peeters and other good Cattleyas and Lælias were plentiful. At one end was a fine batch of the large Java form of Phalænopsis grandiflora; at the other a specimen of Dendrobium thyrsiflorum with twenty-five spikes. Others noted were Lælio-Cattleya × Canhamiana "Rex," and a very fine selection of L.-C. × callistoglossa, L.-C. × Vulcan albo-marginata, and other hybrid Cattleyas and Lælio-Cattleyas; a fine selection of Cattleya Mendeli, that named "Gustaf Adolf" being a very large and fine flower; C. Skinneri atro-violacea and alba; Phaius × oakwoodiensis, Renanthera Imschootiana were also included.

Messrs. CHARLESWORTH & CO., Heaton, Bradford, staged a superb group occupying 200 square feet, and effectively arranged, the depth being increased by the taller plants being carried well up at the back, the more slender sprays of Oncidium macranthum and other graceful species arching forward. There was a very fine display of Odontoglossums, some of them being home-raised hybrids. The forms of Odontoglossum had for the largest and best spotted form O. × oakwoodense; and other good forms were O. crispum Escamillo, O. c. Ruby Queen, O. c. Queen Empress, O. c. Victoria Regina, O. c. Grace Darling, O. c. Clarissa, O. c. Solario, and O. c. xanthotes, all with distinctive features, and some very fine. The hybrids were forms of O. × excellens, O. × Wiganianum, the pretty O. × Phœbe (cirrosum × crispum), an elegantly-shaped white flower spotted with purple; O. × Othello and variety "Sultana," and a fine set of varieties of O. × Wilckeanum. Among Lælio-Cattleyas, the finest feature was made by a very beautiful set of varieties of L.-C. × Fascinator (C. Schröderæ cœrulescens × L. purpurata), of which all are beautiful, and the variation from light to dark rose tints remarkable; three of the best were named Admiral Togo, Ayesha, and Princess Ena; L.-C. × luminosa "His Majesty" had clear chrome-yellow sepals and petals tinted with red, and a fine purple lip; L.-C. × callistoglossa Princess was a grand flower; L.-C. Digbyano-Mossiæ, of a bright rose tint, and the selections of L.-C. × Phœbe and L.-C. × G. S. Ball were very effective, their orange and purple tints being admirable as a contrast with other colours. Other attractive things noted were a selection of the large white Phalænopsis Rimestadtiana, and a plant of P. violacea superba, Scuticaria Steelii, Zygopetalum Protheroeanum, Anguloa Clowesii, a fine specimen of the fragrant Maxillaria luteo-alba, and some specially fine Cattleya Mossiæ, including the very beautiful and large C. M. gargantua, C. M. bellissima, C. M. Wageneri, and varieties of C. M. Reineckiana.

Messrs. HUGH LOW & CO. staged an effective group, the central plant in which was Cattleya Mossiæ Ajax, with thirty-six fine flowers. With it were C. M. Valhalla (very large, and with a finely-coloured lip), and other fine forms. C. Mendeli also were good, the variety Cicero a superb flower, good at all points. In the group also were some good Phalænopsis, the fine Cattleya × Parthenia "Prince of Wales," good Lælia purpurata, one bearing fifteen flowers, and the variety "Daintiness," a clear white with a dark purple blotch on each side of the lip. Cattleya intermedia alba and the Rosslyn variety, good Odontoglossum crispum, Vanda teres and V. t. Little's variety, Dendrobium Bensonæ xanthinum, Epidendrum alatum, Miltonia Warscewiczii, and other pretty things were also shown.

Messrs. STANLEY & CO., Southgate, staged a group in which their fine type of Cattleya Mossiæ was displayed effectively. Also good C. Mendeli, varieties of Odontoglossum crispum. Masdevallias, Cypripediums, Oncidium crispum grandiflorum, &c.



[*From a sketch by Mr. Worthington G. Smith.*

FIG. 143.—ODONTOGLOSSUM × AMABILE VAR. IXION: FROM M. VUYLSTEKE.

Awarded a First-Class Certificate at the Temple Show.

Mr. JOHN ROBSON, Altrincham, arranged a good group, the centre of which was of good forms of Cattleya Mendeli and C. Mossiæ, and the sides principally of Odontoglossum crispum, among which were several good spotted forms. Also good O. × Adrianæ, two fine Cypripedium Rothschildianum, C. callosum Sanderæ, the very large C. × gigas Corndean variety, brightly-coloured Masdevallias, Cattleya Skinneri, &c.

Messrs. WM. BULL & SONS, Chelsea, had a very fine group, in which the forms of Cattleya Mossiæ, C. Mendeli, and Lælia purpurata were good. L. purpurata Schröderiana delicatissima was a charming white form, with pale rose marking on the lip; and L. p. Edward VII., an intensely dark variety; Odontoglossum crispum The Pearl was clear white; O. c. Lady Clarice, and O. c. Mikado, spotted forms. O. × ardentissimum, a very fine form of O. triumphans, Cattleya Mossiæ Princess of Wales, and other showy varieties were also noted.

M. CHAS. VUYLSTEKE, Loochristy, Ghent, staged a small lot of hybrid Odontoglossums, for the two best of which see Awards.

Of smaller exhibits F. MITCHELL, Esq., Blackburn, showed the pretty Cattleya Mendeli Mabeliana.

FRANCIS WELLESLY, Esq., Westfield, Woking (gr., Mr. Hopkins), sent Lælio-Cattleya × zephyra alba, which had previously secured an Award of Merit.

Messrs. JOHN CYPHER & SONS, Cheltenham, had one of the finest exhibits in which Orchids were used so far as beauty and clever arrangement were concerned. The showy Orchids were arranged in a natural-looking group among Ferns, Palms, and other foliage plants, the principal kinds used being good Cattleyas, Lælias, and Odontoglossums. At the back were graceful Oncidiums, with a base of fine specimens of Cattleya Skinneri, one having twenty-four spikes. The middle area was filled in with fine forms of Cattleya Mossiæ and Miltonia vexillaria. In front were three raised designs, capped by light foliaged Palms and made up of Odontoglossum crispum, hybrid Lælio-Cattleyas, Cypripediums, &c.; the central design being principally of white Phalænopsis. All the plants in the group were good, and notably the Vanda teres gigantea, Cypripedium niveum, and other Cypripediums.

Awards.

FIRST-CLASS CERTIFICATES.

Cattleya citrina maxima, from the Marquis DE WAVRIN, Somergem, Belgium (gr., Mr. Gerard de

Geest).—A gigantic rich yellow form. The largest and best of this fine fragrant Orchid yet shown.

Zygopetalum × *Ballii* (natural hybrid of Z. rostratum), from ELIJAH ASHWORTH, Esq., Harefield Hall.—Sepals and petals white with rich purple markings up the middles. Lip white with purple blotches at the base. Previously given an Award of Merit. An ally of Z. Roeblingianum.

Odontoglossum × *amabile var.* "*Ixion*" (Harryano-crispum × crispum), from M. CHAS. VUYLSTEKE.—A most beautiful hybrid with very large, broad-petalled flowers of a delicate blush-white tint. Sepals bearing a fine marking of reddish-rose, and the middle of the of the petals occupied by clusters of blotches of the same colour, a band of irregular markings encircling those in the centre. A very pretty combination. Lip white with reddish markings around the crest (see fig. 143).

AWARDS OF MERIT.

Odontoglossum × *Lawrenceanum* "Adonis" (triumphans × Rolfeæ), from M. CHAS. VUYLSTEKE.—A very [illegible] finely-formed yellow flower heavily marked with purplish-brown. Lip white with purple markings.

Odontoglossum × *loochristyense* "Arddaroch variety," from R. BROOMAN-WHITE, Esq., Arddarroch, Garelochead.—A noble flower, well intermediate between a good O. triumphans and O. crispum, the bases of the segments being white, the outer portions yellow; blotching chestnut-brown.

Cattleya Mendeli "*Cicero*," from Messrs. HUGH LOW & Co., Enfield.—A very large flower of fine substance, blush-white with magenta-crimson front to the lip, which is delicately veined.

Cattleya Schilleriana "*Westfield variety*," from FRANCIS WELLESLEY, Esq., Westfield, Woking (gr., Mr. Hopkins).—A splendid flower with olive-tinted sepals, and petals spotted with dark-purple, and magenta-crimson-veined lip, finely displayed.

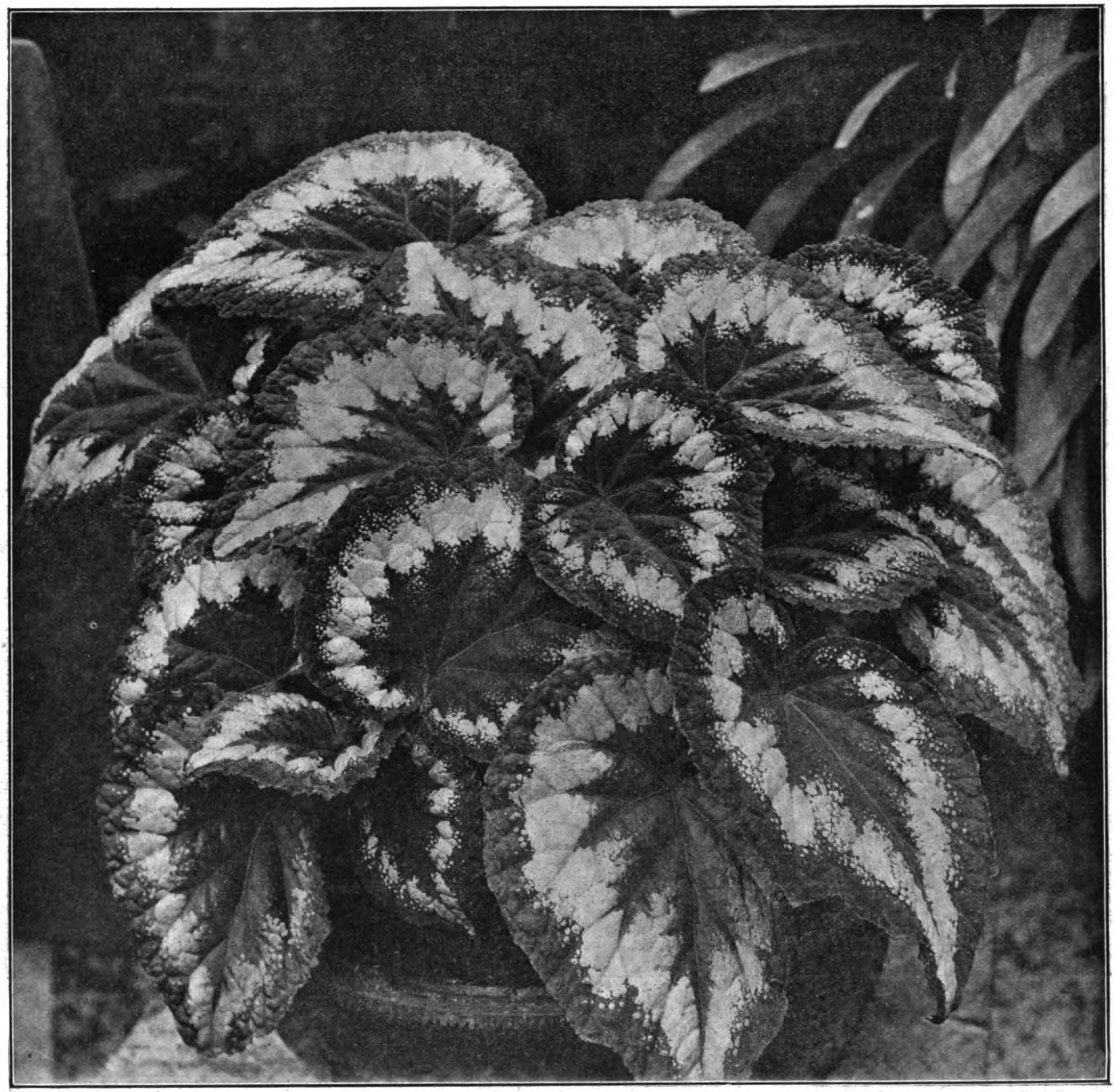
BOTANICAL CERTIFICATE.

Bletia hyacinthina alba, from Messrs. W. CUTBUSH & SONS, Highgate.—A clear white form of that known as B. Gebina. A fine pot of many spikes was shown.

GROUPS OF PLANTS, &c.

Mr. L. R. RUSSELL, Richmond Nurseries, Surrey exhibited a group of choice foliage plants, in which some of the best specimens were of Anthurium crystallinum, Ananassa sativa variegata, Alocasia Thibautiana, Maranta Veitchii, varieties of Caladium, Codiæum (Croton), Cordyline (Dracæna), &c.

NICOTIANA HYBRIDS of the type of N. Sanderæ, crossed also, it is said, with other species, were shown by Messrs. SANDER & SONS, St. Albans, and it is noteworthy that succeeding exhibits of this plant continue to display greater variety of colour than ever. Some of the shades between pure white and crimson, and between pure white and purple, are indescribably pretty. Messrs. SANDER also showed first-class foliage plants, in which magnificent specimens of Dracæna Victoria superba were conspicuous, also foliage Begonias, as Our Queen and His Majesty varieties (that were figured in these pages, Nov. 28, 1903, pp 368, 369), Mrs. H. G. Moon, Fearnley Sander, and Ne Plus Ultra. This last-mentioned variety is illustrated at fig. 144, being the identical plants exhibited at the show, and grouped together in a pan. The leaves are of deep maroon-brown colour,

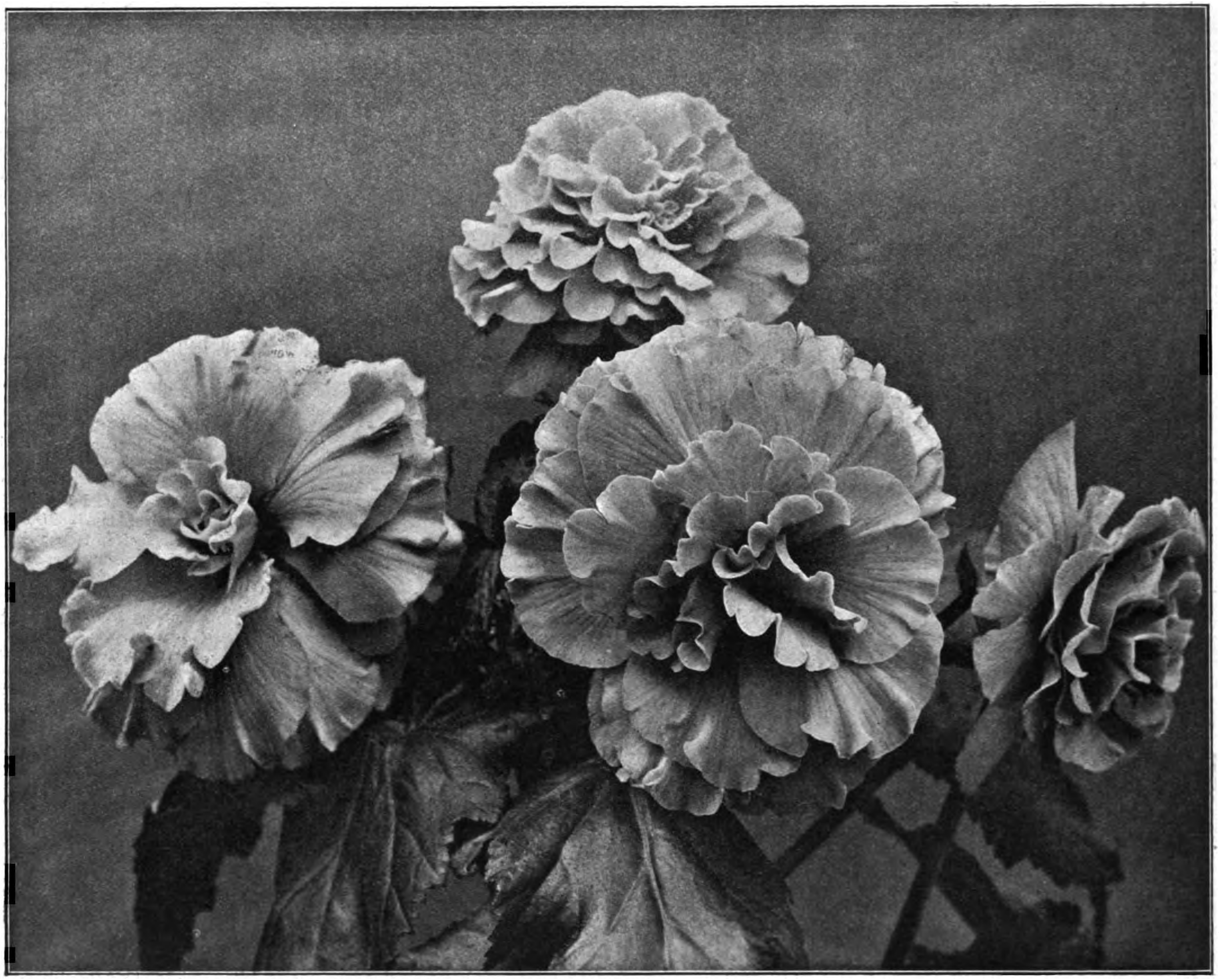


[Photograph by J. Gregory.

FIG. 144.—BEGONIA "NE PLUS ULTRA": EXHIBITED AT THE TEMPLE SHOW BY MESSRS. SANDER AND SONS.

marked and spotted near to the margins with silvery-grey sheen. Cycas Micholitzii, Phœnix Sanderiana, Pandanus Sanderi (a splendid plant of this handsome variegated Pandanus, illustrated in a Supplement to the *Gardeners' Chronicle* April 23, 1898), Ficus pandurata, Alpinia Sanderæ, Nephrolepis Scotti, Furcræa Watsoniana (figured in these pages April 23, 1898, p. 243), were included, and the new Clerodendron myrmecophilum, figured in the *Gardeners' Chronicle*, May 9, 1903, p. 291, was represented by a plant in flower in a 6-inch pot.

One of the most distinct exhibits at succeeding Temple Shows is the collection of Sarracenias and allied plants exhibited by Mr. A. J. BRUCE, Chorlton-cum-Hardy. On this occasion the collection of these plants was even more noteworthy than usual, the selection of plants and varieties being of the very finest. Not only are the diverse forms of the "Pitcher," so well represented, but each plant is also an instance of superb cultivation; Sarracenia purpurea, S. Flambeau, S. Chelsoni, S. flava (and varieties of this, one of which received an Award of Merit), S. Atkinsoni, S. Williamsoni, also a plant of Darlingtonia californica in flower, Drosera capensis, D. binata, Dionæa muscipula, and others, were among the plants included.



[Photograph by J. Gregory.

FIG. 145.—BEGONIA "DUCHESS OF CONNAUGHT": EXHIBITED AT THE TEMPLE SHOW BY MESSRS. WARE, LTD; COLOUR OF FLOWERS ROSY-PINK.

Messrs. FISHER, SON & SIBRAY Handsworth Nurseries, near Sheffield, had a group in which were three good plants of Musa purpurea with leaves of purple-red colour, and a group of plants of Codiæum Duke of Portland, being a cross from the varieties Thompsoni and Hawkeri, and having rich green leaves with golden-yellow colour in the centre.

Mr. WILLIAM ICETON, Putney Park Lane, Putney, S.W., exhibited a group of Lilies of the Valley, Boronia elatior, Caladiums, and other ornamental foliage plants, with tall Palms, &c., at the back.

Messrs. JAS. VEITCH & SONS, Ltd., Exotic Nurseries, Chelsea, exhibited on a stage in one of the narrower tents, small groups of Lobelia tenuior, Rehmannia angulata, Kalanchoe flammea, K. × kewensis, and K. felthamensis; Senecio auriculatissimus, hybrid Gerberas in pots, their stellate flowers varying from pure white to deepest orange-red colour; Schizanthus wisetonensis, hybrid Phyllocactus, Primula obconica alba, Corydalis thalictrifolia, C. tomentosa, and Streptocarpus. Of Streptocarpus there were flowers from pure white to deep-lilac, with some charming shades of rose and pink.

Messrs. W. & J. BROWN, Stamford, presented batches of Verbenas Scarlet King, Miss Willmott, &c., also the star-like Dimorphotheca Ecklonis, &c.

Messrs. SUTTON & SONS, Reading, in addition to the Calceolarias and Gloxinias noticed elsewhere, had a group of finely-grown Schizanthus, in which pure white flowers and shades of pink and rose colours predominated.

Caladiums.—Messrs. JOHN PEED & SON West Norwood, London, staged an extensive group of Caladiums. The colour of the various varieties was well developed, and the plants were well grown. They were arranged from a higher background sloping towards the front, that was furnished with a pleasing edging of C. argyrites and small Maidenhair Ferns, the same subjects being also used for relief among the group. A specimen of C. Golden King was prominent in the centre. We also noticed Oriflamme, Ville de Hambourg, with a pleasing groundwork of red with white maculations and greenish margins; Duchess of Teck, a light-coloured variety tinted with the palest green colour. Triomphe de Comte has large leaves that are red merging to a green margin; Roncador possesses prominent green-coloured venation; Mikado, Raoul Pugno, rose centre with vivid green margin; Comtesse de Brosse, Lady Dorrington. The foliage of this variety is not large, but the rosy groundwork is splashed with deeper red, and terminates in a margin of a pale shade of green.

Messrs. WM. BULL & SONS, King's Road, Chelsea, staged an attractive group of foliage plants. The group, although arranged somewhat formally, was nevertheless pleasing, the colours of the various subjects being well developed. Two large plants of Dracæna Victoria were used as corner subjects for the group, the foreground being composed of small plants of Caladiums, Codiæums (Crotons), Ficus repens variegata, &c. Alocasias were prominent, including A. mortefontainensis, and the lighter-coloured variety A. argyreia. A plant of Cyathea dealbata at the back spread its fronds over neighbouring plants. Ferns, small Palms, and brilliantly coloured Crotons were worked into the group with good effect. Messrs. BULL & SONS also showed Hydrangea nivalis with green leaves, having a broad band of white in the centre, and the fine white double-flowering Stock Excelsior.

(For continuation of Report, see p. 345.)

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge.

THE
Gardeners' Chronicle

No. 962.—*SATURDAY, June* 10, 1905.

CONTENTS.

Berlin Botanical Garden, the 360
Books, notices of—
  Annuals 361
  Botanical Magazine 361
  Guide-books received 361
  Kew Hand Lists ... 361
China, plant collecting in 358
Chrysanthemums, early flowering ... 364
Eremurus, the species of ... 358, 361, 362
Exhibition, a country-in-town 361
Flowers in season ... 351
Flowers in the south-west of England ... 362
Foreign correspondence 358
Frosts, the recent ... 360
Fruit crops and the weather 362
Hybrid plants, the naming of 361
Kew Guild, the ... 362
Lilies, Oriental and American 357
Obituary—
  Thomson, D. S. ... 368
Orchid notes and gleanings 355
Pagoscope, the... ... 361
Peach trees and manure water 363
Pear-midge, the ... 361
Poisonous insecticides, the sale of 360
Presentations to Gardeners 360
Rhododendrons ... 354
Schizanthus wisetonensis 362
Societies—
  Agricultural Seed Trade Association 367
  British Gardeners' Association ... 364
  Royal Botanic ... 366
  Royal Horticultural (Scientific Committee) 364
  Société Neerlandaise d'Horticulture et de Botanique ... 366
Sutton, Mr. Leonard, presentation to ... 361
Tent for garden, how to make a 357
Tulips 353
Vegetables—
  Bolting Cabbages ... 354
Weather in May, the... 362
Week's work, the—
  Apiary, the 359
  Flower garden, the 359
  Fruits under glass... 359
  Hardy fruit garden 359
  Kitchen garden, the 359
  Orchid houses, the 358
  Plants under glass... 358

ILLUSTRATIONS.

Canna Papa Crozy 356
Gloxinia Kaiser Wilhelm 356
Group of Acers and other plants awarded the Veitchian Cup 363
Rhododendron Pink Pearl flowering in Sunningdale Park Gardens 354
Rhododendron avenue in Mr. Anthony Waterer's nursery 355
Rock garden exhibited by Messrs. Cutbush at the Temple Flower Show 365
Separator, a metal, for use in bee-hives 359
Tent, a garden, details for constructing 357
Thomson, D. S., portrait of the late ... — ... 368
Views of the rockery in the newly-made Botanical Gardens, Berlin (Supplementary Illustration)

TULIPS.

A VISIT TO ARDCAIRN, CORK.

ONE goes to Holland to see Hyacinths and early Tulips, but there is always a sameness about the view; but here were glorious flowers that under a clear blue sky had withstood all the storm, hail and rain, followed by hot sunshine of three weeks since (May 10 as I pen these notes). To describe all the sorts minutely would take up too much space, so that I will make a start with yellow forms, and must first of all give prominence to Mrs. Moon. Amid such a quantity this is the finest of all yellow Tulips, the blooms sweet-scented, and the stems like walking-sticks. Another fine yellow variety is Gesneriana lutea, of the same tone but of the shape of a sugar-loaf and highly perfumed. Then there are in great quantity Ixioides (with its rich dark velvety base), "Cloth of Gold," "Sunset" and "Sunray" (all quite distinct), Grenadier, Bandmaster, Golden Spire, Illuminator, Leghorn Bonnet, &c. The two last are very pretty. Some Tulip judges say that Cloth of Gold and Sunset are the same, and that Silver Queen, York and Lancaster, and Shandon Bells, may all have come out of the one basket. As well may they get Northern Star, Myatt's Ashleaf, and Redskin Flourball Potatos out of the same pit mixed, and be pleased afterwards. To see the May-flowering Tulips in a mass for effect is the way to judge distinctions. The Fawn and its sport, La Perle, are here in great abundance and are very beautiful, but Mr. Hartland tells me the Pearl is not constant, that it reverts to the Fawn colour.

Among scarlet varieties Mars is the brightest of any; Koh-i-Noor is a lovely bloom, which when seen side-by-side with Scarlet Emperor, Coronation Scarlet, Inglescombe Scarlet, Mauriana, &c., looks extremely fine; Golconda and Koh-i-Noor are to my mind the finest, Golconda from its lovely sheen of crimson and great substance. The Moor, too, is a most useful bloom to gather late; so is Emerald Gem.

In rich crimson and deep claret colour, Glare of the Garden and its counterpart, Pompadour, are in shape alike, but distinguishable by colour; Crimson Globe is also most lasting and effective; Orange Globe should be grown by the thousand to contrast with the tall spatulata of Dutch gardens.

Then in the Fairie Queen class we have John Ruskin, Royal Visit, and most beautiful Kaleidoscope, a very appropriate title; then the dark shining, cup-shaped Othello should be noted to put in contrast with Bouton d'Or; Nutmeg also and the latter make a fine contrast. The lovely varieties from Savoy were, too, very noticeable, viz., aximensis, Marjoletta, and, as already mentioned, Mauriana; so are La Merveille, Columbus, and Orange Globe, which form fine contrasts. In white Tulips for cutting, no late-flowering variety that passes off without a speck equals Didieri alba, it is here in thousands, and Mr. Hartland tells me how scarce it was fifteen years ago, when he paid sixpence a bulb for it, got it recognised at Kew by Mr. Baker, to whom for classification he is much indebted, and forgives him freely for his Latin nomenclature, which puzzles the Tulip Committee nowadays. When cut in the bud-state, and put up with a bit of Fern, it would pass for a Rose.

To write more on the merits of this collection of Cottage Tulips is needless; they should be seen at noon for their centres, and at evening, when they go to sleep, for their shapes, and this in quantity. It is a great pity the south of Ireland is so far from Vincent Square, for here a whole breadth of one variety might be examined by the Floral Committee and seen to advantage, instead of a few famished blooms several hundreds of miles away from their native soil.

Mr. Hartland deserves great credit for his enthusiasm over the Daffodil and Tulip. Twenty years ago it was the yellow fever with him; now it is the scarlatina he has caught over the vermilion of his Tulip Mars, or the Tangierine Orange cup of his Leedsii Narcissus "Nectarine," or the same seen on the beautiful hybrid which he so justly calls Paint-brush. *Visitor.*

A COLLECTION AT COLCHESTER.

To the ordinary visitor, and to those generally interested in hardy flowers, the experience of a visit to Messrs. Wallace & Co.'s nursery at Colchester affords an object-lesson of considerable value. Quite recently there could be seen breadths of Tulips growing in a degree of perfection in a soil that is not far removed from brick-earth. During a recent visit there I was shown two or three acres of Darwin Tulips of the greatest perfection, and remarked the exceptional growth and great vigour of the plants. These handsome Tulips are evidently more at home and grow with an infinitely greater vigour in this heavy Colchester loam than is usually seen when they are cultivated in light sandy or shallow soils, and where organic manures have to be employed more liberally and with greater frequency.

In the case of some of the quarters of the nursery, Mr. Wallace informed me that the soil had been trenched 3 feet deep before planting the Tulips, and had been previously heavily manured for a former crop. The finest development was seen in those bulbs that were planted early, and not later than November; those planted after the sales were over were somewhat inferior, thus emphasising the need of planting at a seasonable time. Another point I noticed in these Tulip grounds was that the popular May-flowering type is grown and flowered entirely without protection, hence it would appear that in a soil of great depth the plant is rendered more vigorous and enduring.

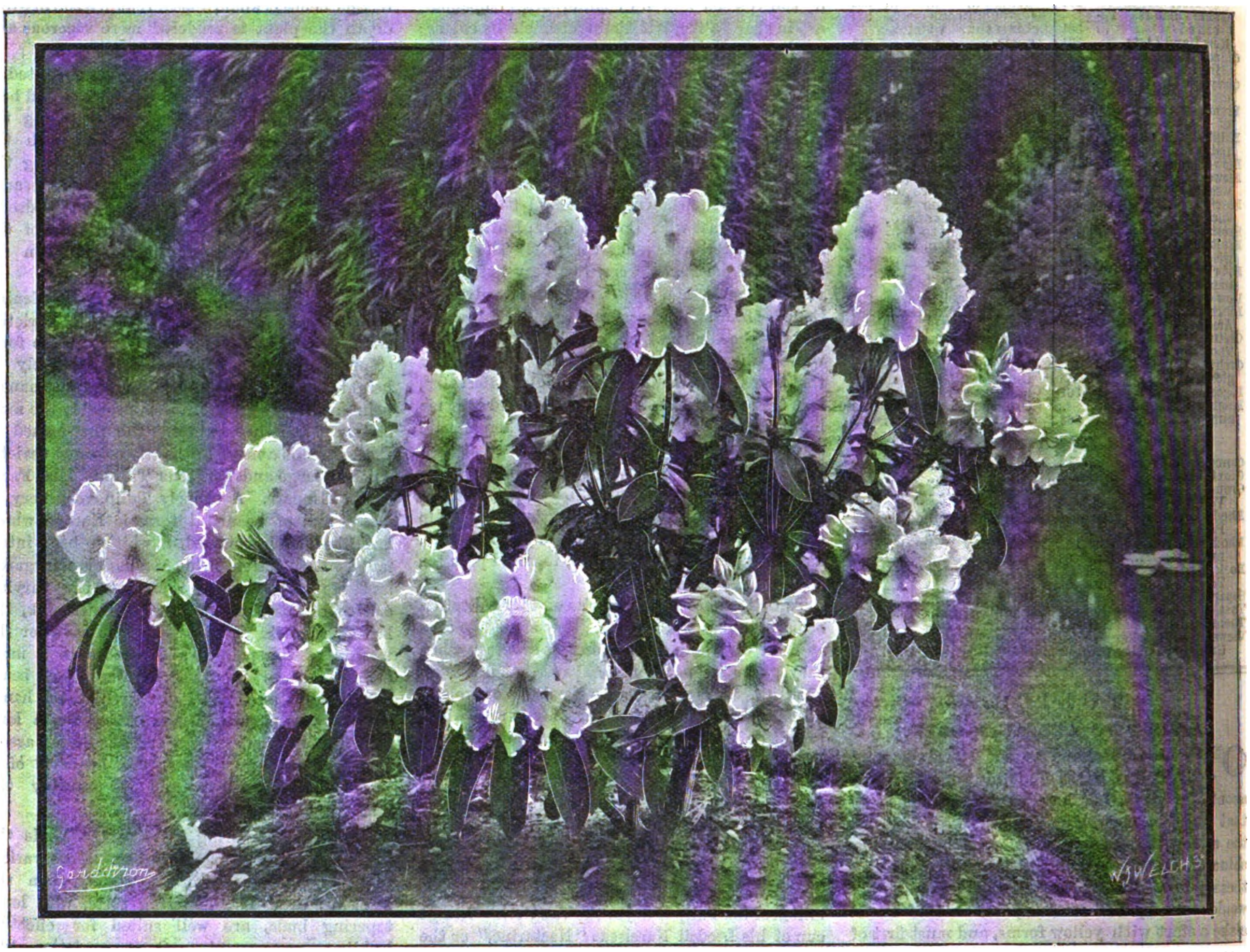
A large collection of Tulips has been planted in a field apart from the general collection, and here I noted many of the best sorts. Taking the Darwin kinds first, I was impressed with the great beauty of Clara Butt, a gem among the salmon-coloured kinds, a flower of great beauty and refinement. Quite recently this handsome form received a First-class Certificate of the Royal Horticultural Society. It has been for some years in general cultivation.

Those who indulge in progressive gardening should become acquainted with the varieties Glow, Hecla, and King Harold, as these form stepping-stones to each other, not merely in height, but in degrees of colour, the last-named being a glowing ruby-crimson, probably the most stately "Darwin" extant. The first-named of these three is a most brilliantly coloured variety. Another large and gorgeous Tulip is Mrs. Farncombe Sandars. A shapely Tulip, very fiery in colour and of beautiful form, is Europe, which has, like the last-named, a whitish base internally. Rose Queen, Pride of Haarlem, Margaret, and Madame Krelage represent the varying shades of rose, rose-pink, and blush-pink, the last-named being of a deeper tone save for the margin of the petal, which shades to a more delicate hue. Zephyr and Phyllis possess beautiful and distinct shades of rosy-lilac, the handsome flowers of the former lasting for a long time in perfection. Negro and the Sultan are of the very darkest colours, the latter is of a blackish-maroon shade, and is probably the darkest Tulip known.

In the May-flowering and Cottage kinds the display was a most extensive one. More varied, probably more showy if less stately than the Darwins, these May-flowering sorts, with long, tapering buds, are well suited for effective bedding arrangements. Some varieties, like Leghorn Bonnet, possess a singularly beautiful colour, the term "soft-yellow" but very feebly describes its beauty, and gives no idea of its real merit. Mrs. Moon (syn. fulgens lutea), maxima, Gesneriana lutea pallida are other choice and showy kinds with yellow-coloured flowers. Maid of Honour is a beautiful flower painted scarlet-and-white. The flower of Kathleen is very large in the bud stage and of cream or very soft-yellow colour. Orange King is a mingling of orange and scarlet colours; its boldness displays its lustrous flowers to considerable advantage. Very conspicuous, too, was Inglescombe Pink, which with Inglescombe Scarlet, Scarlet Emperor, Innovation and others contributed not merely to a brilliant display, but to a feast of this popular flower as rich and varied as it was remarkable. *E. J.*

RHODODENDRONS.

At a time when Rhododendrons are furnishing their usual abundant and brilliant contribution to the floral effects in our gardens, the photographs reproduced (figs. 148 and 149) may be of interest. Fig. 148 illustrates a fine plant of Messrs. Jno. Waterer & Sons' new variety, Pink Pearl, in flower in Major Joicey's garden at Sunningdale Park, Berks (gr., Mr. Thorne). As this variety has been distributed only a very few years, the plant illustrated would appear to be almost as large as the earliest ones, and it will be noticed that there is an excellent truss of the very large, delicately-coloured flowers on almost every shoot. Two larger plants of the same variety have been recently in flower in Baron Sir Henry Schröder's garden at the Dell, Egham, and during the present week we have seen it in bloom at Dover House Gardens, Roehampton (gr., Mr. J. F. McLeod), where there is a bed containing upwards of a dozen plants of Pink Pearl. A spray of flowers from Sir Trevor Lawrence's garden was illustrated in the *Gardeners' Chronicle*, July 28, 1900, p. 63.



[*From a photograph by H. J. Wright.*

FIG. 148.—A FINE PLANT OF THE PEERLESS RHODODENDRON PINK PEARL IN FLOWER IN SUNNINGDALE PARK, BERKS.

The view reproduced at fig. 149 represents one of the principal roads through the nurseries of Mr. Anthony Waterer, Knap Hill, near Woking, a nursery which is famed for the cultivation of Rhododendrons and for trees and shrubs in general. The figures shown in the illustration are those of Mr. Anthony Waterer and Mr. Geo. Paul, the latter gentleman leaning on his umbrella.

VEGETABLES.

BOLTING CABBAGES.

Why there should be in some directions great complaints as to autumn-planted Cabbages bolting off prematurely to flower, literally reverting to their natural or primitive habit of annual form, and yet from others not a word of complaint comes, seems explicable only on the supposition that varieties planted are diverse, and that in the one case those which are best fitted for spring sowing are sown in the autumn, whilst those varieties which never depart from their biennial nature are grown in the spring. When recently visiting Hackwood Park, Basingstoke, I saw two large breadths, some 7,000 plants in all, from two diverse sowings and three diverse plantings, all hearting-in finely, and yet from the entire batch not a dozen had bolted, I failed to find cause for any complaint. Now the varieties there grown, and which by long experience Mr. Bowerman is assured will come true to character, are Sutton's April, Favourite, and Flower of Spring, Mein's No. II., and Veitch's Lord Beaconsfield. The two last are later than the others.

By far the greater bulk are Flower of Spring, evidently one of the safest Cabbages to grow that is in commerce. Soon after seeing this batch I visited Messrs. Sutton & Sons' Reading seed farm, where they have some 20,000 Cabbage plants put out, of many varieties, for ordinary seedmen's trials, and where also very interesting information could be found as to the habits of varieties in the spring. Now several years' practical experience with many varieties of Cabbages planted in the autumn have satisfied the firm that the bolting trouble arises solely from the planting at that season of unfit varieties. Still further, that if varieties that have had high reputations for biennial consistency and excellent hearting in the spring be seeded near other varieties of diverse characters, then the good stock will soon deteriorate, or lose its hitherto consistent nature.

Such varieties as Early York, Nonpareil, Sugarloaf, Winningstadt, Enfield Market, and others sown in the spring heart-in capitally in summer and autumn, but, sown in the autumn, many plants of each will either bolt freely or become coarse and quite out of character. Those features were to be seen on these and similar varieties at Reading the other day, and where none had bolted the plants were still quite unrecognisable. Probably there is no section of the Brassica genus that is more difficult to keep absolutely true than are Cabbages. They need the most constant care in their selection for the production of seed stocks, and then of entire isolation of each variety when in bloom. Even with the greatest care a few "rogues" will show in the best of stocks, and it not infrequently happens that these, being most probably reversions, give the chief bolters. The Coleworts give literally all bolters from autumn sowings; St. John's Day, one-half; from Christmas Drumhead four-fifths, and others ranging down from one-fourth to one-sixth. Red Cabbages are far less true to character, By way of contrast, Sutton's April, the very earliest of upwards of 1,000 plants in trial rows of stocks and for seed selection, had not a single bolter. Of over 2,000 Flower of Spring, only one had bolted, and of 1,400 Sutton's Favourite again, only one had run to flower. Certainly facts such as these speak for themselves. All plants were put out at the same time, on the same exposed plot, and close beside were the seed beds or rows, in every case showing exactly the same characters as were found in the planted-out quarters. It would be very unfair did anyone assume that a trial of this nature is biassed or unreliable. No firm in the kingdom has greater interest in testing stocks from all sources annually than have the Messrs. Sutton; and if the trial be demurred to as a trade one, the 7,000 plants at Hackwood Park is absolutely an impartial one. But whilst the subject of Cabbage bolting creates so much interest, would it not be well, now there is ample room, for a trial of autumn-planted Cabbages to take place at Wisley, which would be void of suspicion? *A. D.*

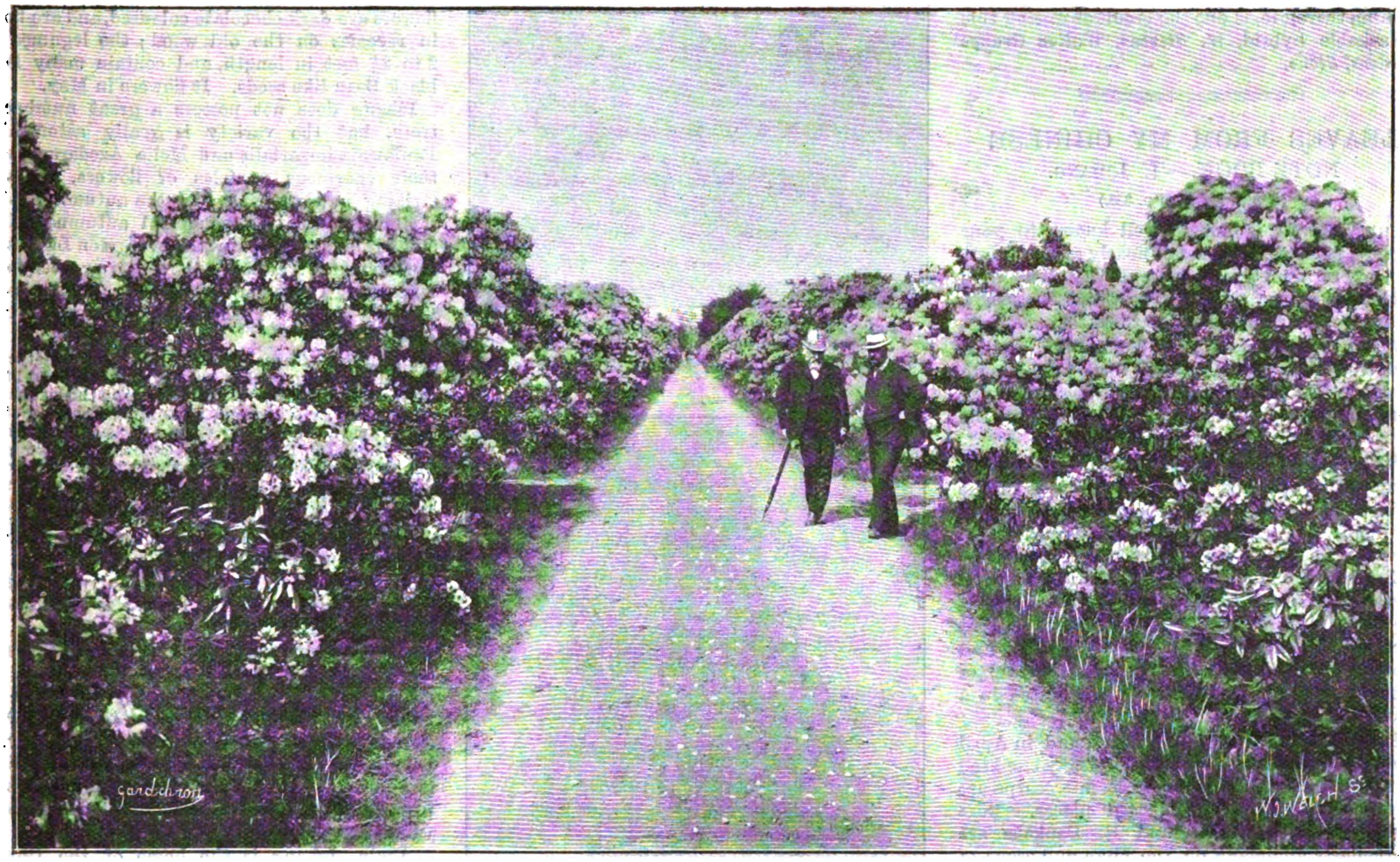


FIG. 149.—VIEW IN THE RHODODENDRON NURSERY OF MR. ANTHONY WATERER, NEAR WOKING. (SEE P. 354.)

ORCHID NOTES AND GLEANINGS.

ORCHIDS AT BANK HOUSE, ACCRINGTON.

THE collection of R. Briggs-Bury, Esq. (gr., Mr. Wilkinson), has recently undergone several changes. The rare Cattleyas, including one of the most varied collections of albinos, which were favourites of the late Mrs. R. Briggs-Bury, and the Lælias having been dispersed to allow of the extension of Odontoglossum culture. The cool-house Orchids will in future form the chief feature. A new range of houses is about to be provided, and alterations are to be made in the existing Odontoglossum houses. Recently there was a very good show of Odontoglossums, including several fine blotched forms of O. crispum, the best of which were O. crispum Empress of India, of the form of O. c. Luciani, and with flowers 4 inches across, white, handsomely blotched with purple; O. crispum "Stormberg," not so broad in the petal, but showily blotched; O. crispum Mrs. F. Sander, a good white flower with the bright-purple marking seen in forms of O. × ardentissimum. Of others noted were good forms of Odontoglossum × loochristyense, including the large and finely-marked variety figured as O. harvengtense, some specially-fine O. × Wilckeanum, one form with a white ground being very near to O. crispum. Also a number of large white O. crispum, good O. triumphans, including the broad-petalled variety latisepalum, and a number of other pretty cool-house Orchids.

In the warm-house range was a good selection of Cypripediums, two large plants of C. Lawrenceanum Hyeanum Bank House variety, bearing out the character of that variety for beauty and free growth; also strong plants of C. callosum Sanderæ and C. × Maudiæ, together with good examples of many other rare kinds.

In the central division was a display of Dendrobiums in bloom, including some of the best varieties of D. nobile, the finest-coloured form being D. n. nobilius. Others in bloom were D. nobile virginale, D. × Rolfeæ roseum, several forms of D. × Ainsworthii and D. × splendidissimum, and a specimen of the pretty yellow D. Harveyanum, whose petals as well as the labellum are deeply fringed. These were arranged with Cymbidium Lowianum and foliage plants.

DENDROBIUM SEIDELIANUM.

A plant of this pretty rose-coloured species, with an orange disc to the lip, has been in flower in the gardens of Mrs. Brightwen, The Grove, Stanmore (gr., Mr. J. W. Odell), for a considerable time; and the plant has an interesting history, as it was sent originally from Shanghai folded in a newspaper. It forms a pretty close-growing plant, and is a profuse bloomer. It is commonly known as D. pulchellum in gardens, and was illustrated under that name in Loddiges' *Bot. Cab.*, t. 1935. In July, 1887, I sent specimens to the late Professor Reichenbach, who replied that the name D. pulchellum was not admissible, as it differed from Roxburgh's species of that name, and that he had decided to call it D. Seidelianum. About the same time the matter had been gone into at Kew, and the plant renamed D. Loddigesii by Mr. Rolfe, whose interesting note on the subject was published in the *Gardeners' Chronicle*, August 6, 1887, the same date as the note giving Reichenbach's reference was published in the *Gardening World*. *J. O'B.*

ODONTOGLOSSUM CRISPUM G. W. LAW-SCHOFIELD.

A flower of this fine blotched Odontoglossum crispum, sent by G. W. Law-Schofield, Esq., New Hall, Hey, Rawtenstall, near Manchester (gr., Mr. Shill), shows it to be a very handsome variety of the O. c. Lindeni class. The flower is 3½ inches across, the sepals 1 inch, and the petals 1¼ inch wide. The reverse of the flower has a purple band up each segment, and the rich spotting of the surface shows through to the back. The petals have one large irregular purple blotch ½ an inch across, and clusters of confluent purple spots nearer the silver-white base. The sepals have three to four large purple blotches, and the margins of all the segments are white, the petals being fringed. Lip fringed, white, with one large red-brown blotch in front of the yellow crest, and several smaller ones on each side.

Odontoglossum Thompsonianum.

I would like to supplement your favourable remarks on this plant in the issue for May 6 by stating that the plants were raised by Mr. Rappart, of Liscard, Cheshire. They were obtained by us when he parted with his collection in 1902, the plants being very small at that time. To him, therefore, is due the credit of raising this remarkable hybrid. *W. Stevens, Walton Grange Gardens, Stone.*

LEAVES FROM MY CHINESE NOTE-BOOK.—I. Ichang.

(Continued from p. 338.)

The Coriaria is not so well known to your readers, perhaps, and is not nearly so attractive. Its flowers are polygamous, and the plant when in fruit is rather showy. The Chinese consider its foliage and stem poisonous to cattle.

Wistaria sinensis is abundant, often scaling high trees, but the semi-bush form is the more common. Its flowers are borne in great abundance, and vary much in shade of colour, the white form being, however, rather rare.

Loropetalum chinense is another well-known shrub which abounds here. On the tops of the cliffs, amongst loose conglomerate and limestone boulders, it forms a well-nigh impenetrable scrub. The plants are seldom more than 3 feet in height, very much branched, and when in full flower look like patches of snow at a distance. Messrs. Veitch show the plant very well, but there is an enormous gulf between the best grown pot plants and the plants in a state of nature. In Devon and Cornwall, if planted in a rockery, it ought to thrive.

Rose-bushes abound everywhere, and in April perhaps afford the greatest show of any one kind of flower. Rosa lævigata and R. microcarpa are more common in fully exposed places. Rosa multiflora, R. moschata, and R. Banksiæ are particularly abundant on the cliffs and crags of the glens and gorges, though by no means confined thereto. The Musk and Banksian Roses often scale high trees, and a tree thus festooned with their branches laden with flowers is a sight to be remembered. To walk through a glen in the early morning or after a slight shower, when the air is laden with the soft delicious perfume from myriads of Rose-flowers, is truly a walk through an earthly paradise.

Sophora viciifolia is very fine in the glens and gorge. In March and April it is covered with masses of bluish-white flowers. This ought to make a very acceptable plant in gardens where it proves hardy. This plant has a very wide distribution. It is common in Yunnan, and in the warm valleys of rivers bordering Tibet. The Ichang plant is much less spiny than that of Yunnan and West Szechuan. Possibly the latter is really the Indian S. Moorcroftianum.

Two very common plants on the cliffs in the glen are Eriobotrya japonica (Loquat) and Chimonanthus fragrans. Both flower about Christmas. These are two out of many plants which were erroneously supposed to be natives of Japan.

Caryopteris Mastacanthus is common amongst conglomerate boulders, but is not nearly so fine as it is further west.

Cratægus Pyracantha and Vitex Negundo are exceedingly common, and so also is Cæsalpinia sepiaria. This thorny shrub is semi-scandent in habit, and very like the better-known C. japonica. Its handsome foliage and erect-thyrsoid racemes of bright yellow flowers make it a very conspicuous object.

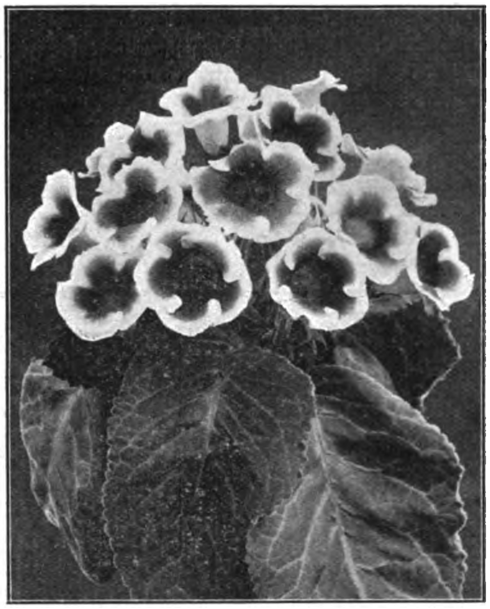


Fig. 150.—Gloxinia Kaiser Wilhelm: colour of flowers plum-purple and white.
Shown at the Temple by Messrs. Cannell & Sons.

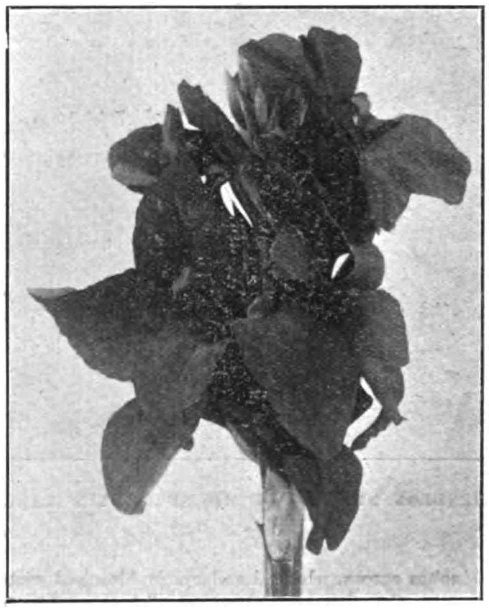


Fig. 151.—Canna Papa Crozy: flowers of rich orange-red colour.
Shown at the Temple by Messrs. H. Cannell & Sons.

Symplocos cratægoides, with its pretty white flowers and bright blue fruits, is abundant. This useful and charming shrub deserves to be better known. Deutzia scabra, Lagerstrœmia indica, Azalea indica, Jasminum floridum, Nandina domestica, Ilex cornuta, Viburnum utile, and Buddleia variabilis are all extremely common shrubs. Of other well or lesser known shrubs which are common, I may mention:—

Abelia chinensis, A. parvifolia, Rhus Cotinus, Buddleia officinalis, B. asiatica, Ilex pedunculata, I. Oldhami, Deutzia discolor, Desmodium floribundum. Eleagnus pungens, E. glabra, Spiræa dasyantha, Eurya japonica, Hypericum sinense, Hydrangea aspersa, Berchemia lineata, Euonymus alatus, Polygala Mariesii, Viburnum brachybotryum, V. propinquum, Camellia Grijsii, Rubus parvifolius, and many other species. Cydonia sinensis with red, and C. cathayensis with white or blush-white flowers, are commonly cultivated. Lengthy as is list, I am not justified in omitting Itea ilicifolia. This Holly-like shrub, with long, pendent racemes of pure white flowers, is one of the handsomest of all the Ichang shrubs. Of fluviatile shrubs, the commonest are Distylium chinense, Salix variegata, Ficus adpressa, Rhamnus davuricus, Adina globiflora, Myricaria germanica, and a curious form of Buxus sempervirens. Climbers are very much in evidence, and include such beautiful plants as Lonicera japonica, Trachelospermum jasminoides, Pueraria Thunbergiana, Clematis Henryi, C. Meyeniana, C. Benthamiana, C. Armandi, C. leiocarpa, Vitis flexuosa, V. Labrusca, V. Henryana, V. Thomsoni, and Mucuna sempervirens.

This last is a rather remarkable plant. Two miles above Ichang, on the right bank, is an enormous specimen, called by foreigners the "Big Creeper." It covers several hundred square feet of ground, climbing over several Pine-trees and many Bamboos. The base of the main trunk is almost as thick as a man's body; the flowers are dark chocolate coloured, and are borne in racemes on the old wood; the legumes are 2 to 2½ feet in length, and contain many large black Bean-like seeds. It flowers in May.

Ichang does not possess a great number of trees, but the variety is really astonishing. Paulownia imperialis and Melia Azedarach, with their enormous panicles of flowers, are very striking in the spring. In the autumn, Sapium sebiferum, with its wonderful autumnal tints, stands alone. In winter the evergreen Ligustrum lucidum, and Xylosma racemosum are very conspicuous. The latter nearly always shelters some wayside shrine. Perhaps the commonest trees are:—

Gleditschia sinensis, Rhus semialata, Platycarya strobilacea, Quercus aliena, Cedrela sinensis, and Pterocarya stenoptera. The Misleto occurs on the last-named tree. Other less common trees are Sterculia platanifolia, Populus tremula var. villosa. Cratægus pinnatifida, Celtis sinensis, Dalbergia hupehana, Acer oblongum. Cunninghamia sinensis, Ailanthus glandulosa, Broussonetia papyrifera, Ulmus parvifolia, Hovenia dulcis, Sapindus Mukorossi, Salix babylonica, Sophora Kronei, and S. japonica. Of this latter a curious variety occurs in which the leaves and young shoots are clothed with a dense white velvety indumentum.

As with flowering shrubs, so with herbs, though in a less degree. Ichang is the home of many favourite garden plants. One of the commonest and best-known is Primula obconica. This charming herb abounds everywhere, but more especially in moist, grassy places on the banks of the Yangtze and in the glens. Occasionally, under very favourable conditions, in height, size of flower, and luxuriance of foliage, it approaches the cultivated form, but more usually it is a dwarf and almost insignificant weed.

Again, Ichang is the home of the Chinese Primrose and the type of the cultivated Chrysanthemum. Other favourites which are common are:—

Corydalis thalictrifolia, Anemone japonica, Sedum sarmentosum, Saxifraga sarmentosa, Iris japonica, Linum trigynum, Lycoris aurea, L. radiata, Rehmannia angulata, Hemerocallis fulva and H. minor. Other characteristic herbs are:—Adenophora polymorpha, Bletia hyacinthina, Asarum maximum, Ophiorrhiza cantonensis, Viola Patrinii, Delphinium chinense, Lysimachia Henryi, L. clethroides, Potentilla chinensis, P. discolor, Fragaria indica, Thalictrum minus, Marus pulchella, Verbena officinalis, Platycodon grandiflorum, and many Compositæ, Leguminosæ, and Umbelliferæ.

Perhaps Ichang is best known to horticulturalists generally as the home of the lovely Lilium Henryi. This acknowledged favourite occurs on the limestone and conglomerate rocks, but is now by no means common. Lilium Brownii and its variety chloraster are fairly common; L. concolor and L. leucanthum also occur, but are rare.

Ferns are not rich in species, but Woodwardia radicans, Osmunda regalis, Pteris longifolia, P. serrulata, Nephrodium molle, Cheilanthes patula, and Gleichenia dichotoma are very abundant. A variety of Adiantum Capillus-Veneris is very common on stalagmitic limestone in the glen. Pieces of these rocks covered with Ferns are detached and find their way all over China, being popularly known as "Ichang Fern-stones."

A hasty reference to the common floating plants of the ponds and ditches around Ichang must bring this note to a close. Euryale ferox, with its handsome foliage, is very common; Nelumbium speciosum is, of course, cultivated. Other common aquatics are Limnanthemum nymphæoides, Jussiæa repens, Salvinia natans, Trapa natans, Azolla filiculoides, Marsilea quadrifolia, Monochoria vaginalis, Eriocaulon Buergerianum, and several species of Potamogeton and Utricularia. In late autumn, when the Azolla changes to a rich crimson tint, the ponds look very fine. In some Rice-fields near Ichang Dr. Henry found a very anomalous plant. It was made the type of a new genus—Trapella sinensis, and doubtfully referred to the natural order Pedalineæ. All my efforts to re-discover this interesting plant have met with disappointment.

(To be continued.)

A CHEAP GARDEN TENT, AND HOW TO MAKE IT.

A DISADVANTAGE in many tents is that they are so hot and stuffy, whereas one only requires such a structure as a protection from the sun and from an occasional shower. It is also of much importance that a tent should be fairly commodious, and one that will meet the requirements mentioned above is illustrated in fig. 152[1]. It is only reasonable to expect that a light tent is not intended to be out in all weathers. Rain, wind, and sun soon damage it, so that it is equally necessary that a light tent should be one that is easy to erect and equally easy to take down, and this can be claimed for the one here illustrated, which further has this advantage, that there is no occasion to always erect it in the same spot. This, in view of preserving the grass, is an important feature.

The framework is constructed with Bamboo, which renders it very light and yet strong, and when not in use the poles and canvas can be rolled up together in quite a small space.

The making of such a tent calls for no particular skill; the iron fittings to connect the various parts of the frame can readily be made by the local blacksmith, whilst the cover will possibly require the aid of one of the fair sex to stitch it together as described below; but in the meantime let me explain the framework.

The tent measures roughly 6 feet square, and is 6 feet 6 inches high, the latter measurement being that of the Bamboo as imported, which can be obtained in natural yellow, brown, or the more useful tortoise-shell pattern, which, as most people know, is an artificial decoration of the yellow Bamboo.

The poles should be 1½ inch thick, and selected as much alike as possible, eight being required, viz., four for the uprights and four for the top. The poles should first be ferruled at both ends, using either iron or brass ferrules, about 1¼ to 1½ inch deep. These should fit on tightly; and it may be necessary to rasp or shave the Bamboo a little in order that they should do so, and then to plug each end with a hard-wood plug about 4 inches long. Plugs can be driven in tight, as the ferrules will prevent the Bamboo from splitting. The plugs are then further secured with two or three wire panel-pins through the Bamboo; this prevents them drawing out should they shrink in dry weather. The bottom end of the upright poles are next fitted with iron pins (fig. 152[2]), extending about 3 inches. These can be made by using 6-inch wire nails, letting them into the hole half their length and then cutting off the heads, or else the blacksmith will make four 6-inch pins of five-sixteenth or three-eighth inch round iron, with one end pointed to fix into the poles. The top ends of the uprights have a similar fitting extending 2 inches, which has a screw thread cut on it and fitted with a winged or fly nut (fig. 152[3]). The horizontal poles which form the top of the tent are fitted with an eye at each end, see fig. 152[4]. These eyes measure 4½ in. long over all, and are forged out of flat wrought iron, the eye part should be not less than 1¼ inch over with a hole ⅜ inch full. The tapered end should be jagged as shown in fig. 152[4] to prevent any possibility of drawing out, and when fixed the eyes should extend 1½ inch beyond the end of the pole. Eight of these are required, and will cost but a few pence from the local smith. In cutting the poles for the top these eyes must be allowed for in the length, so that for a 6-foot tent the poles will be 5 feet 10 inches long. It will be clearly seen that one end of two poles fit on to the screwed pin of each upright, and these are secured by means of the fly nut, although the latter is not screwed on until the covering is in position.

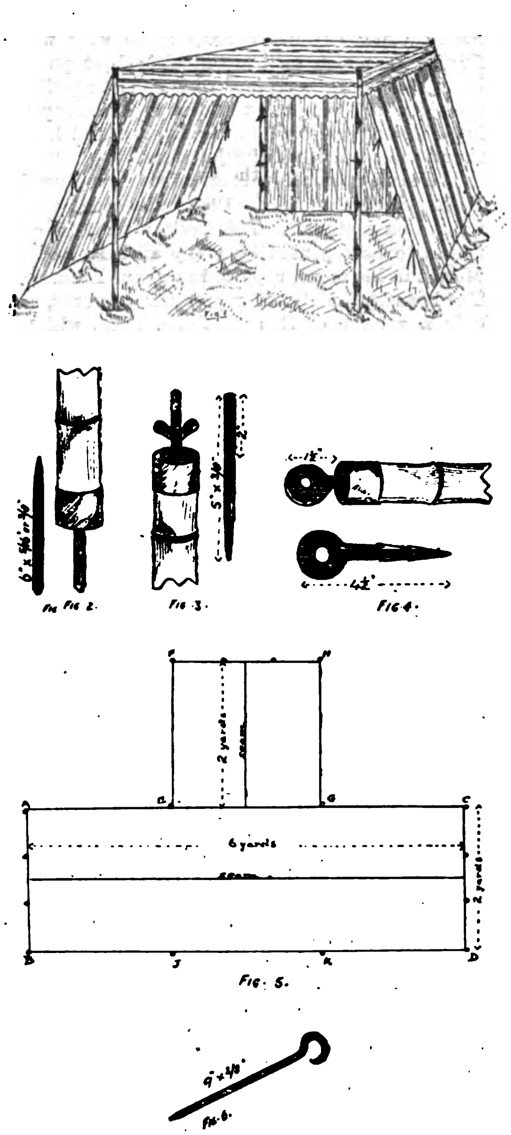


FIG. 152.—A CHEAP GARDEN TENT AND HOW TO MAKE IT.

[1]—The tent complete and fixed.
[2]—Bottom end of upright pole.
[3]—Top end of upright pole.
[4]—End of horizontal pole.
[5]—Plan of cover.
[6]—Iron peg.

The covering is the most expensive part of the tent, but by following the lines laid down it is quite possible to economise in this respect unless it is absolutely necessary to have a water-proof canvas. For a cheap tent one can get a good striped canvas or ticking 36 inches wide, which is shower-proof and most suitable for the tent in question, at from 8*d.* to 9*d.* a yard. For the covering one needs 16 yards of this material for a plain tent, or if a vallance is preferred with scolloped edges, as shown in fig. 152[1], another 2 yards are required. Fig. 152[5] gives a plan of the covering, showing how to make it up. The part enclosed by A, B, C, D, represents the two sides and the top, made up of two widths of the canvas 6 yards long sewn together. The back is the part enclosed by E, F, G, H, which is two pieces 2 yards long sewn together and then attached to the centre of the long piece. At E, G, J, K, should be sewn a tinned iron ring ½ inch inside to attach the covering to the poles, the rings slipping over the screwed pins.

On the edges of the tent, sides and back are sewn strings of strong braid to attach them to the poles if required, whilst at the bottom are fixed similar tinned rings for holding the sides or back outwards at any convenient angle as illustrated; ¾-inch red braid is most suitable, and can be bought at any first-class general draper's with the covering material. All parts where rings or braid are attached must be strengthened on the inside with some strong material to prevent the force of the wind tearing the fixings away from the covering. This will no doubt be readily understood. The sides and back when extended require hooks or stakes, and short cords attached to the rings. In order not to disfigure the grass it is better to have hooks made out of ⅜-inch round iron, 9 inches long, as shown in fig. 152[6], which, when fixed at an angle of say 45°, have a good holding strain, yet can be put in or withdrawn without injury to the lawn. Four are required for each side. Use solid blind-cord for the ropes. When the cover is fixed each pole should have a stay consisting of thin galvanised wire, one end having a loop to fit over the screwed pins, the other being attached to one of the hooks mentioned.

Referring again to the cover, if a vallance is required cut a 2-yard length of the 36-inch-wide canvas into three strips lengthways, form a scollop on one edge of each strip, and bind it with some of the ¾-inch braid, then attach these strips to the cover between the points E J, J K, and K G. A tent of this description can be erected in a few minutes, and given fair wear and tear will last for several seasons.

It is a very simple method to place a canopy on this tent if preferred. All that is required is to add an additional piece similar to the back piece upon the front side of the covering, edging it with the vallance. There are two additional poles required, and two horizontal poles to take the sides of the canopy, and two extra stays for the front of the canopy. They add but little to the original cost, and are a great addition to the tent. The writer can confidently recommend this tent to the consideration of amateurs, having had a similar one in use for several seasons. *S. W. N.*

ORIENTAL & AMERICAN LILIES.

NOTWITHSTANDING the scorching character of the present season, Lilies have grown with almost abnormal rapidity. The month of May, usually a growing period, was characterised by strong and long-continued sunlight, without a single shower of generous rain, which if it came providentially now, would be like Mercy as depicted by Shakespeare in its influence upon "the place beneath"; but doubtless the heavy showers of March and early April gave our Lilies a start in life, just when they were beginning to grow; and in my own garden that precious introduction called "gravitation water" has saved them ever since. I have seldom seen certain species, such as Lilium giganteum, Lilium auratum, and Lilium monadelphum, so far advanced in their development at this season of the year.

The great Lily first mentioned—a native of India—demands much patience on the part of its cultivator. I have sometimes had immense bulbs that declined to send up a flowering stem, after growing steadfastly for a least four years! This no doubt may have been owing to my practice of withholding from Lilies of every description, strong manurial stimulants, for the late Dr. Wallace, of Colchester, used to assert, as the result of long experience, that Lilium giganteum was a great exception to the ordinary rule. Nevertheless, I am strongly disposed to think that in the direction of flowering it is not what my friend Mr. Matthew Arnold would have term "inevitable."

There are several other Lilies of considerably smaller dimensions, of which quite as much might truthfully be said. Lilium Browni, for example, is not very enduring, and where it does succeed for any length of time it seldom produces more than one solitary flower. It is a beautiful and effective Lily, but exceedingly transitory. Lilium Krameri, a plant of great beauty, and Lilium rubellum bloom in my garden for one short season and then wholly disappear. Of these the latter is if anything the less reliable. The bulbs are microscopic in size, and by reason of some secret and serious limitation, are subject to premature decay. Of all the many beautiful natives of the East and the West that adorn our gardens, the most entirely reliable, in my estimation, are Lilium auratum, monadelphum, tigrinum, davuricum (of which the finest form is incomparabile), pardalinum (the richly-spotted Lily of California), and the lovely Lilium Washingtonianum, which some cultivators have, however, discovered to be capricious. Here it has flowered in the same congenial situation for the last ten years. Lilium longiflorum is not of lasting character, and speedily degenerates by attempting too much in the direction of perpetuation; the fragrant Lilium candidum is only too frequently the victim of disease, but Lilium speciosum is entirely free from all such limitations, and grandly flowers, and nobly endures. *David R. Williamson, Wigtownshire, May 27.*

FOREIGN CORRESPONDENCE.

THE SPECIES OF EREMURUS.

I WOULD like to say a few words about two species of Eremurus, called by Mr. G. B. Mallett, in his interesting notes (*Gardeners' Chronicle*, 1905, p. 148), "curious species of botanical interest." The true E. Kaufmanni, Regel, and the true E. turkestanicus, Regel, were discovered by my late husband, Alexis Fedtschenko, and myself in 1870, during our first travels in Turkestan (1868–1871).

E. Kaufmanni is the finest of all the species of Eremurus. It is small, but has large snow-white flowers, with a yellow spot in the middle, very thin and delicate, forming a dense spike. The leaves are densely covered with hairs turned backwards. It resembles small specimens of E. himalaicus, but is much finer. The coloured plate in A. P. Fedtschenko's *Travels in Turkestan*, fasc. 12, tab. 3 (= E. Regel, Liliaceæ, in the *Transactions* of the Imperial Society of Friends of Natural History, Anthropology and Ethnography), 1876, gives a good idea of the plant. E. Kaufmanni, Regel, is not yet known to cultivators. After having for years attempted in vain to get it alive, it is only during the summer of 1904 that I received some bulbs from Turkestan, which I am now trying to cultivate in my garden. They were collected by my son, Boris Fedtschenko, Chief Botanist of the Imperial Botanic Garden of St. Petersburg. The geographical area of this species is limited to a few localities in Turkestan. The plant which Mr. G. B. Mallet describes as E. Kaufmanni is only a variety of E. spectabilis, M.B.

E. turkestanicus, E. Regel, was described in *Gartenflora*, 1878; in *Acta H. Petrop.*, 1878; and in the above-mentioned A. P. Fedtschenko's *Travels in Turkestan*, fasc. 12, 1876, cum. tab. ii. E. Regel's description is very good, but the figure does not represent well the colour and character of the living plant as I saw in it 1870 and 1897 in Turkestan, and as I see it in my garden (in Olgino, Moscow Government, Moshaisk District), where I cultivate many species of Eremurus, and where E. turkestanicus flowers every year. It is not handsome; it has a loose spike with white flowers (greenish on the outside), short purple-black filaments, long red anthers; the pedicels are erect and very stout at the top; the capsule is glabrous, pyriform; the seeds grey, and larger than the brown seeds of E. altaicus.

The same name, E. turkestanicus, was given by E. Regel, in *Gartenflora*, 1880, to another plant, figured on plate 997. This fault, after 1880, continues to be repeated by many authors, and by Mottet in his monograph of the genus Eremurus. The beautiful plate 997 represents, however, also only a variety of E. spectabilis, M.B., which I gathered in Turkestan in 1869 and 1897, and have cultivated in my garden since 1897. It is very hardy, flowers every year in early spring, but the seeds do not always ripen. I call this plant, in a large work I am preparing for the press, E. spectabilis, M. B., var. marginata O. Fedtschenko. It is no doubt this plant that Mr. Mallet calls E. turkestanicus, but, according to the laws of priority, this name appertains to the other plant, the one described in 1878. *Olga Fedtschenko, Imperial Botanic Garden, St. Petersburg.*

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cypripedium bellatulum.—The repotting of this distinct "slipper" Orchid should be done, if necessary, soon after the plants have flowered, but as long as the drainage material is in good order renovation of the surface materials will suffice. Freshly imported plants should be fixed in ordinary Orchid-pans, with some old lime-mortar-rubble or fresh limestone worked in amongst the roots for drainage to a depth of a couple of inches. Over this work in a layer of good fibrous loam, peat, a little sphagnum-moss and semi-decayed Oak-leaves, well mixed together, and surface the whole with a thin layer of fine loam or chopped sphagnum-moss, the former by preference. Suspend the plants in a light part of an intermediate compartment, and for a long time apply only sufficient water to keep the surface materials moist, taking care never to wet the leaves. When the plants are growing freely, the pans may be dipped occasionally to the rim, so as to wet the whole mass; but this should be done only when the materials are approaching to dryness. The cool end of a Cattleya-house will suit the plants best during the winter season, when very infrequent waterings will be sufficient, so long as the thick, fleshy leaves retain their plumpness. If the conditions of the atmosphere in the house in which they are grown are suitable, the character of the rooting medium is of secondary importance, for plants are thriving here in coal-refuse and leaves, and others grow them well in small pieces of limestone alone, syringing them overhead almost daily during the summer season. Yet many fail when every conceivable detail is carried out with the utmost care.

Cypripedium concolor, C. niveum, C. Godefroyæ, and the variety "leucocheilum" may be treated as the above, the only practical difference being that more heat is needed. They may be suspended or stood on a shelf in an East Indian house in a position free from the influence of the sprayer and syringe. It is a difficult matter to re-establish plants whose roots have gone, a detail in the attempt being to tie a small lump of peat to the base of each piece to hold it firm in the new material. Use great care and discretion in the application of water, and when dipping is resorted to carefully refrain from immersing the receptacle beyond the rim.

Hybrids of this section are amongst the elect of the genus, and being somewhat difficult to rear are generally of considerable value. Those hybrids having C. bellatulum for one of their parents may usually be potted as other Cypripediums, using some limestone or old mortar rubble for drainage purposes. If combined with a warmth-loving species adopt similar treatment, but where a cool-growing species is concerned grow the hybrid with C. bellatulum. In the case of hybrids obtained from other members of the section warm treatment is always to be recommended. It is not always advisable to suspend plants of any of the above hybrids, though where a few only are grown and the stage is a considerable distance from the roof it is preferable. Keep them free from thrips by fumigating the house regularly. Never allow the rooting medium to become sour. A considerable degree of dryness may be beneficially permitted during the winter season. Beware of drip.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Medinilla magnifica.—This is worthy of a place in a collection of stove-flowering plants, and very handsome specimens may in a few years be obtained from cuttings. As a specimen only should this species be grown. When the plants have ceased to flower and they are making fresh growth, potting on will be necessary, using for this purpose a compost consisting of two parts of rich fibrous loam, one part of turfy peat, and one part of broken charcoal, adding sufficient silver-sand to keep the whole porous. Make the soil very firm around the roots, and when the soil has become nicely filled with roots, afford the roots diluted manure-water obtained from soaking sheep-manure. These applications may be continued until the time for flowering arrives. During the period of growth considerable heat and moisture, shade, and overhead syringings with clear water are necessary. For providing cuttings select growths of the current year just as they begin to get hard, and detach them with a heel from the old wood. Insert each cutting singly in thumb-pots of sandy soil, and place them in the propagating-frame.

Hymenocallis macrostephana, when once established in 9-inch pots, needs very much feeding until it is again repotted. Make frequent applications of liquid obtained from sheep-manure, together with a teaspoonful of Clay's Fertiliser once a week. The same treatment as for Medinilla should be employed during their growing period, and if repotting is necessary the same compost may be employed. When the plants pass out of flower remove them to a slightly cooler atmosphere, and afford the roots clear water only.

Gesnera exoniensis.—The plants are now showing signs of activity, and should be potted in fresh soil after carefully removing the old soil from the corms. If the stock is sufficient for the requirements, the strongest corms only need be used, but if it is desirable to increase the stock this can be done later from cuttings. Care should be taken not to break the corms when removing the old soil. Let the fresh compost consist of loam and peat in equal parts, and add silver-sand in the proportion of a third part of the whole. For 48-size (5-inch) pots three corms should be used. Fill the pots to within 2 inches of the rim with the compost, on this place a layer of silver-sand and then the corms; fill up the pot with soil and gently press it with the fingers to make it firm. One application of water may be given to settle the soil, and frequent light syringings should then be sufficient until growth appears. Place the pots on a shelf near to the light in a warm house, but shade them from the direct rays of the sun.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Strawberries.—British Queen and other late-ripening varieties will continue to supply fruits until the earliest of those outside are ready. Apply diluted liquid-manure to the roots once or twice daily until the fruits change colour, and vigorously syringe the plants each day after the houses have been closed, in order to prevent red-spider. As soon as runners are available, layering must be carried out to raise plants for forcing next season. A great deal depends on an early start being made, and upon getting the plants into 5 or 6-inch pots early in the season. Various methods of layering are practised, and that of layering direct into 5-inch pots has much to recommend it for plants to be forced very early. If several thousands of plants are forced, a sufficient number for the earliest forcing purpose may be put into such pots. For raising the main batch of plants I much prefer putting the layers into 3-inch pots, owing to experience gained during a very wet season. Fill the pots with good loam, containing a little manure from an old Mushroom bed, and make it moderately firm. Obtain the layers from young plants set out last August if possible, as these supply the earliest and strongest runners. Secure the layers with a peg or stone, and pinch out the point of the runners beyond the layer, supplying the plants with water when necessary.

Melons.—It becomes more easy to keep up a constant supply of fruits after May is out. Young plants should be always kept in readiness to fill up vacancies as they occur. Plants bearing fruits which are now ripening should be afforded plenty of ventilation and a moderate supply of clear water. It is a great mistake to keep the atmosphere very close when the fruits are of full size and ripening. Heavily-cropped plants which are swelling their fruits and have only a limited root run, should be top-dressed, and diluted liquid manure may be applied to the roots two or three times weekly. Let the house be well charged with moisture at closing time in the afternoon.

Melons in Frames. — Keep the bottom-heat steady by re-lining the frames with manure when necessary. Top-dress the plants when the fruits have set, using a rather less rich compost than that employed for Melons in houses, as strong growths cannot be easily checked, but liberal feeding can be done later if it is considered necessary. Continue to cover the frames at night. Pay strict attention to stopping of the Melon shoots, and to the necessary watering and syringing of the plants.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Verbenas, Tropæolums, Petunias, &c., require a rich, loamy, well-drained soil. If the soil is very light apply cow-manure, and if it is too heavy add a good proportion of leaf-mould. The plants are short-lived on hot, sandy soils. The variety Miss Willmott is of lovely pink colour. Verbena venosa is a grand autumn-flowering plant, but must be given the best treatment possible. Tropæolums of the Vesuvius type require similar treatment. Petunias require a sunny position and moderately rich soil. Koniga variegata should not be planted in very rich soil, or the variegation may disappear. K. maritima minima is a good plant for the forming of a groundwork below other plants.

Dahlias and *Salvia patens* raised from seed, cuttings or tubers may now be planted in mixed borders, or the Dahlias may be planted in a quarter devoted to Dahlias. The ground must be deeply dug and liberally manured. Afford a substantial stake to each plant and secure them at once by ties. Salvia patens has the defect of dropping its flowers on poor soils, therefore requires considerable manure.

China Asters and *Stocks* require moderately rich soil. Preserve as much soil as possible about the roots when transplanting them. The single-flowered Aster sinensis is a favourite for cultivation in borders and for cutting, as the stalks are of good length.

Alonsoa Warscewiczii and other varieties of Alonsoa that were pricked out in cold frames are ready for planting. They are suitable for borders and for covering ground under large plants, such as Hydrangea paniculata grandiflora.

Phlox Drummondi requires full exposure to sun, and will flower over a long period if afforded rich soil.

Nymphæas.—Now is a good time for planting Water-Lilies. The pond should be made about 1½ to 2 feet deep and be well exposed to the sun. Secure the plants in baskets, working some good loam in firmly amongst the roots. Then drop the baskets into the desired positions. Clear out all water weeds. Aponogeton distachyon, Hydrocharis Morsus-ranæ, Peltandra virginica, and Sagittaria variabilis are other water plants suitable for present planting.

Seeds to Sow.—Lobelia cardinal isand L. syphilitica can be sown now in pans containing light fine soil. Cover the seed thinly, and place them in a temperature of 60° or so. Both varieties are capital plants for the bog-garden. Seeds of Campanula pyramidalis and Humea elegans may be sown.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

The Fig.—To prevent overcrowding the trees should be freely disbudded at this season, rubbing off with the finger and thumb young shoots which will not be required. The leaves being of large size, much space is needed between the shoots in order that the leaves of one shoot may not shade those of another, otherwise there will be only a poor crop next year. "Stopping" will also need to be carried out. When a shoot has made five or six perfect leaves pinch out the points, and the resulting outgrowths from this pinching should produce next year's crop, except in some cases where the earlier shoots will form small fruits, which will not come to maturity this year; these may afterwards be removed entirely. Trees in restricted rooting areas and growing in calcareous soils will need considerable feeding immediately the crop of fruit is formed. In properly constructed borders and where the drainage is perfect, up to the time the fruit commences to ripen alternate waterings may be given of diluted liquid manure-water from the farmyard, and of a chemical mixture composed of three parts of superphosphate of lime and one part of nitrate of potash, applied at the rate of 2 oz. per square yard. During the time the trees are actually ripening their fruits too much moisture would cause the fruits to split, and the flavour of them would be impaired.

Gooseberries.—Where large fruits of the Lancashire varieties are required, a considerable quantity of the smaller fruits, useful at this season for preserving in bottles, should be gathered. Mulch the ground about the bushes, and afford water to the roots according to requirements. The individual fruits may be increased in size by the employment of capillary attraction, which is practised by the competitive prize cultivators in Lancashire. [These growers affix a piece of lead or stone weighing ¼ oz. or more to the corolla on the end of the berry. They also wind one end of a woollen thread around the stem of each fruit, the other end being placed in a bottle or basin of water or manure-water. Ed.] The caterpillars of the Gooseberry Sawfly may be removed by hand-picking. Hellebore powder or tea should only be applied at this season if the attacks are serious.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Runner Beans which have been raised in pots or boxes should now be planted out, affording to each plant a stake, which will support it until fresh roots are made, and other sticks are applied. Climbing plants grow most quickly when they find early means of support. When the work of planting has been completed afford a good watering, and repeat this when it becomes necessary to do so. Seedlings in the open should be thinned until the plants are 9 or 10 inches apart from each other

Tomatos should now be planted, preferably against a warm wall, and each plant kept to a single stem, pinching out the side growths as soon as they appear. The soil in which they are to be planted should be somewhat poor, but when the plants have set a good crop of fruit they may be fed freely with advantage.

Turnips.—Sow seeds on a north or east border, a cool position being most suitable after this date. If the Turnip fly is troublesome dust the plants with dry wood-ashes, when the revolving sprayer cannot be applied. The wood-ashes will also act as a good fertiliser.

Small Salads.—Maintain a constant supply by sowing seeds at frequent intervals. Radishes soon become soft and spongy in hot weather. Mustard and Cress in like manner soon become useless, whether sown indoors or in the open. To have them in use together the cress should be sown two days earlier than the Mustard.

Coleworts.—During early autumn, winter, and spring these are amongst the most useful greens or small-headed Cabbages, being very hardy. They may be planted much closer together than Cabbages are put. The variety London Rosette is the one usually grown, but the hardy green Colewort, when sown at the end of June or in July, will continue to grow well into the winter, and may be planted at 1 foot apart each way.

Asparagus-beds.—Plants which have come into bearing this year for the first time should now be allowed to develop their growths, and thus make good crowns for affording a crop next season. The Asparagus-manure supplied by Messrs. Willis Bros., Harpenden, if used according to directions, at the rate of half a pound to the square yard, when cutting is finished, and again in the autumn, will be found to considerably increase the vigour of the plants.

THE APIARY.

By Chloris.

Metal Dividers and Foundation.—Last autumn a shopkeeper invited me to inspect a crate of sections which he had purchased just as it had been taken from the hive. He had been endeavouring to get a good section out without damage to it or its companions, but had failed. He now asked me to give him a little assistance. No one would believe how tightly they were sealed in with propolis, and to add to this no separators had been used. After a good deal of trouble we got the sections out; but what a messy task it proved! Honey everywhere, but only three or four sections were really fit for sale. The quality of the honey left nothing to be desired, but for the sake of saving a few coppers the contents of the crate had been spoiled. The appearance of the sections left much to be desired, and appearance goes a long way when one desires to sell an article.

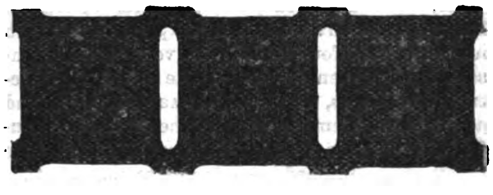


Fig. 153.—Metal Divider.

Best Kind of Separators to Use and their Price.—There are three kinds of dividers on the market—1, wooden; 2, tin; 3, perforated zinc. Those of wood are cheapest as far as prime cost is concerned, but they are not durable, so they cannot be considered economical, although they cost but a halfpenny each. Those of tin or perforated zinc are about a penny each, are slotted, very durable, as with care they will last years.

Foundation.—When fitting up sections use full sheets of extra thin "Weed" foundations, avoiding all cheaper makes as you would poison. Weed foundations cost about 3*s*. 2*d*. per lb., but if you have preserved your own wax the makers will convert this into super foundation at 1*s*. per lb. It is penny wise and pound foolish to use starters in place of full sheets.

EDITORIAL NOTICE.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, JUNE 12—Bank Holiday.
THURSDAY, JUNE 15—Linnean Society Meets.
FRIDAY, JUNE 16 { Royal Botanic Society, Lecture. Gardeners' Royal Benevolent Institution, Annual Festival Dinner at Hôtel Metropole.

SALES FOR THE WEEK.

WEDNESDAY NEXT—
Palms, Begonias, Ferns, Geraniums, &c., at 67 and 68, Cheapside, by Protheroe & Morris, at 12.
FRIDAY NEXT—
Fruit and Market Garden, with Residence, Lodge, Two Cottages, Glass, &c., well planted, at Laindon Hills, Essex.—The Nurseries, Wick, Littlehampton, 8 Acres, 10 Greenhouses, Model Block of Buildings, 3 Cottages, fully stocked.—Freehold Estate, 9½ Acres, 15 Greenhouses, Outbuildings, &c., Orchard well planted, at Chigwell Row, Essex. Sale at The Mart, E.C., by Protheroe & Morris at 2.—Orchids in large variety, at 67 and 68, Cheapside, by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick —60·5°.
ACTUAL TEMPERATURES:—
LONDON.—*Wednesday, June* 7 (6 P.M.): Max. 55°; Min. 47°.
Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 8 (10 A.M.): Bar., 30; Temp., 60°. *Weather*—Dull.
PROVINCES.—*Wednesday, June* 7 (6 P.M.): Max. 53°, Guildford; Min. 51°, N. of Scotland.

The Sale of Poisonous Compounds used in Agriculture, etc.

A DEPUTATION waited on the President of the Board of Agriculture on the 24th ult., to complain of the monopoly which "chemists" have as regards the sale of these substances. At the deputation Mr. RICHARDS is reported to have spoken as follows:—

Mr. G. H. RICHARDS, manufacturer of XL-All Insecticide, said: "In 1892 I experimented with nicotine, and found it was a very valuable insecticide. I then saw one of the large manufacturing chemists, Messrs. THOMAS WHIFFEN, and approached them to see if they could manufacture nicotine in this country, After some delay they obtained permission to manufacture nicotine from tobacco in bond. I then introduced nicotine insecticides to horticulturists and the trade générally, and they found them superior to anything else, and they put them in their catalogues. I have now 2,500 agents selling these insecticides, and it sometimes happens that one of these agents is dropped upon by the Pharmaceutical Society for selling these preparations. I may say that until these insecticides were proved to be so successful, the chemists took little or no notice of the nurseryman selling them, but as soon as they saw the insecticides were successful, they urged upon the Pharmaceutical Society to take up prosecutions, and these have been going on for the past two or three years. Last year I introduced an insecticide to the Hop-growers in Kent, and though it is a little more expensive, the Hop-growers who have used it say that it will save them a considerable amount of money, as one or two sprayings is equal to many sprayings with other insecticides."

From the same source we learn that the President, in replying to the deputation, made the following amongst other remarks:

"The only thing you ask for is that the monopoly that the chemists have got should not go on, but that others should be allowed, with proper safeguards, to sell these sheep-dips and other things. You will remember that at Sir HERBERT MAXWELL'S Committee there was evidence given from this Board by Mr. CRAWFORD, and he said plainly that the Board of Agriculture was of opinion there should be no monopoly as regards the sale of these preparations for use in agriculture, such as weed-killers, sheep-dips, &c., where such articles contain poisons in the Schedule of Pharmacy Act, 1868. That was the view taken by this Board then, and I am in favour of that. I think it is wrong that there should be a monopoly in important things like sheep-dips, which, as Mr. CONNELL has said, are wanted so much in Scotland, and will be wanted much more in the future. I think other people should have the right to sell them with proper safeguards. But I would say this, some regulations are necessary for the protection of the public from these poisonous and dangerous compounds, and I think the person who sells them should have a licence from the local authority, necessitating that they should be sold in the same condition as received from the manufacturers, the bottles and packages to be unopened and to have some indication as to their contents. I think that is a safeguard that ought to be given to the public, and I do not think there would be the slightest damage to anybody concerned. As regards a Poisons Bill, I believe there is a Bill on the lines as recommended by Sir HERBERT MAXWELL'S Committee—I believe it is in preparation now. Mr. FITZROY, of the Privy Council, is here now, and I will take an early opportunity of speaking to him on the matter, so that we may do what we can to push it forward."

No amount of legislation can entirely prevent careless, stupid, or wicked people from obtaining, distributing, or making improper use of these poisonous substances; but in the interests of the public it is, as the President remarked, most desirable that every reasonable precaution should be taken to ensure against accident. The sale of poisons, like that of firearms or explosives, needs to be fenced in with precautionary restrictions. We cannot say that up to the present the precautions have been adequate. Insecticides, ant-killers, weed-killers, and similar substances are sent to us, and they are advertised habitually, without the slightest indication of their poisonous character. All such compounds or substances, intended for use in agriculture or horticulture, should be distinctly labelled POISON, and the name of the seller should be attached to each package, large or small. If these and other obvious precautions were taken, and the law strictly obeyed, there would be no reason why the nursery and seed trade should not be licensed to sell POISONS. The deputation assured the President that the precautions above mentioned were actually taken.

BERLIN BOTANICAL GARDEN (see Supplementary Illustration).—The new botanical garden in Dahlem, a few miles south of the town of Berlin, is about 100 acres in extent. It was started about ten years ago on a treeless, undulating site, miles away from factories, and since then over £250,000 have been spent on its construction, whilst probably as much more will be required to complete it. Dr. ENGLER, under whose direction the work is being carried out, has turned to good account the undulating, almost hilly character of the ground by constructing miniature ranges, which are said to be faithful imitations of the Pyrenean, Scandinavian, Carpathian, Balkan, Caucasian, and Himalayan groups, each group being planted as naturally as possible with the vegetation peculiar to it. The arrangement of rocks, gullies, slopes, swamps, &c., is most ingenious, and where the climatic conditions are favourable the plants are most satisfactory. The Rocky Mountains, the plains of California, the South African veldts are also represented, as are the high elevations of China and Japan. In the summer, geographical groups of plants in pots and tubs are arranged to represent the characteristic floras of tropical and subtropical regions, such as Central America, Australia, the Canary Islands, &c. It will be seen that the scheme of the garden is a most ambitious one. Generally the effect is pleasing as well as instructive, but, as is to be expected, some of the groups cannot possibly be made to look well. Two of the most successful bits of alpine gardening are represented in the Supplementary Illustration. Time is needed to enable Dr. ENGLER and his staff to make a selection of plants suitable for the purpose, and at the same time capable of cultivation in the conditions provided. No such attempt at geographical gardening has ever been made before, and we heartily congratulate all concerned on the success of the scheme so far as it has gone.

LINNEAN SOCIETY OF LONDON.—There will be a meeting on Thursday, June 15, at 8 P.M., when the following papers will be read: 1, "Biscayan Plankton, Part VI., Colloid Radiolaria," by Dr. R. N. WOLFENDEN, F.L.S., &c.; 2, "Biscayan Plankton, Part VII., Mollusca," by Dr. P. PELSENEER; 3, "Longitudinal Nerves and Transverse Veins in Bamboos," by Sir D. BRANDIS, K.C.I.E., F.R.S., &c.; 4, "Some Indian Undershrubs," by Sir D. BRANDIS, K.C.I.E., F.R.S., &c.; 5, "Notes on a Skeleton of the Musk Duck, Bizuria lobata," by Mr. W. P. PYCRAFT, A.L.S., &c.; 6, "Note on the genus Widdringtonia," by Dr. MASTERS, F.R.S. Exhibitions: "Arum maculatum in relation to Insects" (with lantern-slides), by Rev. J. GERARD, S.J., F.L.S., &c.

THE FROSTS ON MAY 21 AND 22.—We have received several additional letters describing the injury done to garden crops, especially in the Midland Counties, on May 21 and 22. Mr. W. MILLER, Berkswell, Coventry, whose letter, written on May 21, was published in our issue for May 27, states that had he waited until the next day he would have had to relate damage of a much more serious nature. Mr. J. W. MILES, Blenheim Gardens, Woodstock, states that 4° Fahr. of frost was registered in that garden at 5 feet above ground, and 8° Fahr. of frost on the ground line. Considerable injury was done. A letter from Mr. WORSLEY, Isleworth, published on p. 352, speaks but poorly for a good fruit season.

PRESENTATION TO MR. HENDERSON.—Mr. HENRY HENDERSON, gardener at Cromarty House, Ross-shire, having been appointed estate manager to Mrs. BALFOUR, of Dawick Stobo, was recently entertained at the Cromarty Arms Hotel, when a presentation was made to him.

PRESENTATION TO MR. J. G. WESTON.—Mr. J. G. WESTON, who has been gardener to Lord DUNCANNON, Bessborough, Piltown, Ireland, for the past eight years, has lately removed to Eastwell Park, Kent, where he has been appointed gardener to H. J. KING, Esq. Before leaving Bessborough Mr. WESTON was presented with an illuminated address and a pair of silver flower-vases by the heads of departments on the estate, and other presentations were made by friends in the locality. Mr. WESTON gained his experience at such well-known and efficient garden establishments as Hatfield, Childwickbury (St. Albans), and Mentmore. He was inside foreman for three years at Childwickbury, and for three years and a half was foreman at Mentmore. Those who were present at the Gardeners' Dinner in 1903 may remember the tribute Lord DUNCANNON then paid to his gardener, Mr. WESTON, who had carried out many improvements in the gardens at Bessborough, and won distinctions at the fruit show held at Cork in 1902, and other horticultural exhibitions.

Presentation to Mr. Leonard Sutton.—On the 26th ult. the members of the Reading and District Gardeners' Mutual Improvement Association visited the Reading University College Gardens, and were escorted through the departments by Mr. Chas. Foster. We have on previous occasions referred to the excellent condition of these gardens under Mr. Foster's management, and to the superior vegetable and other crops that are raised there; it is not surprising therefore that the 150 members of the Association were much pleased with all they were shown. Occasion was taken of this meeting to make a presentation to Mr. Leonard Sutton, President of the Association. The presentation was a silver centre-piece, suitably inscribed, and accompanied by an illuminated address. The address was designed to represent the four seasons of the year, Spring being represented by Star Cinerarias, Summer by Gloxinias, Autumn by Chrysanthemums, and Winter by Star Primulas. At the foot was a water-colour drawing of Hill Side, the residence of Mr. Sutton. In the wording of the address the presentation was described "As a slight and very sincere token of our great respect and appreciation of your [Mr. Leonard Sutton] kind services as President [of the Society] since January, 1902," &c. Appended were the names of 200 subscribers. Mr. Sutton had no previous knowledge of the presentation, and in a few words expressed his great surprise and gratification. Speeches were also made by Mr. A. W. Sutton, Mr. Stanton, Mr. Powell, Mr. T. Neve, Mr. W. Barnes, Mr. H. G. Cox (Secretary), &c.

"Botanical Magazine." — The plants figured in the June number are the following :—

Nepenthes Rajah, Hook. fil., t. 8017. — Discovered by the late Sir Hugh Low, and introduced into Messrs. Veitch's Chelsea nurseries by Mr. Burbidge. See *Gardeners' Chronicle* (1881), ii., p. 493, fig. 91.

Erica lusitanica, Rudolph, t. 8018. — See E. codonodes in *Gardeners' Chronicle* (1877), p. 463, f. 70; and (1896), i., p. 487, t. 74. Naturalised at Lytchett Heath, near Poole, Dorset, where it reproduces itself by seed, so that, according to the Hon. Mrs. Evelyn Cecil, between one and two acres of ground are covered with thousands of bushes.

Rhabdothamnus Solandri, A. Cunningham, t. 8019.—The curious New Zealand Gesnerad, figured from Mr. Gumbleton's garden in *Gardeners' Chronicle, March* 11, 1905, p. 146.

Lycaste Locusta, Reichenbach fil., t. 8020.—See *Gardeners' Chronicle* (1879), i., 524. Flower-segments green, lip of the same colour with a white fringed border. The stalk of the pollen-masses bears on each side at the base a narrow, deeply-cleft process, the significance of which is not apparent. Native of Peru.

Bowkeria Gerardiana, Harvey, t. 8021. — See *Gardeners' Chronicle* (1904), ii., 398, with figure, under the name of B. triphylla.

Cypripedium Chamber-Leeanum. — The system adopted in naming plants of hybrid origin sometimes leads to odd combinations, as in the case of the hybrid obtained by the late Edward Pynaert by fertilising C. Chamberlainianum with the pollen of C. Leeanum. Written without the mark of hybridity (×) the reader might well imagine the name was misspelt.

Annuals. — The second pamphlet of the "One and All" garden series, edited by E. O. Greening, is entitled *Annuals*. Information about this large and useful class of plants is always useful, and the paper before us is illustrated. Mr. T. W. Sanders is responsible for the letterpress. The pamphlet has already reached its second edition.

Flowers in Season.—Messrs. James Veitch & Sons send us from their Combe Wood Nurseries a large selection of cut specimens of flowering shrubs, among which we note Styrax Obassia, a handsome shrub with large white, pendulous, bell-shaped flowers, and bold foliage; Osteomeles anthyllidifolia, a Rosaceous shrub with a terrible name, with elegant pinnate foliage like that of a Sanguisorba, hoary on the under surface, and with terminal corymbs of white Cratægus-like flowers; Chionanthus retusus, an Oleaceous shrub with shining foliage, and loose, pendulous panicles of elegant white flowers with narrow petals; Cornus Kousa, a Japanese species with large white or pink bracts surrounding the flowers; numerous varieties of Philadelphus, double and single, including "Manteau d'Hermione," "Boule d'Argent," P. grandiflorus, &c.; Magnolia Watsoni, handsome alike in foliage and flower, the latter with a fragrance so powerful as to render it unsuitable for indoor decoration; M. tripetala, M. parviflora, M. Soulangeana, Carpinus cordata, with handsome foliage and hop-like spikes of female flowers, together with other rarities and beauties too numerous to be recorded.

The "Eckford" Testimonial.—The contributions to this fund up to the evening of Saturday, June 3, amounted to the sum of £38 15s.

Eremurus.—Madame Olga Fedtschenko has lately described, in the *Bulletin* of the Boissier Herbarium (tom. iv., 1904, p. 771), three new species of this genus which have been collected in Central Asia. Madame Fedtschenko herself collected some of the species, and cultivates some ten of them in her garden at Olguino, near Mojaïsk, prov. Moscow. The three new species above alluded to are E. Korshinskii, E. comosus, and E. lactiflorus; of the last mentioned an illustration is given.

The Pear Midge.—We have already published information on this subject in the *Gardeners' Chronicle*, and we now note that a pamphlet has been issued on the Life-history of the Pear-midge (Diplosis pyrivora), by Walter E. Collinge. The publishers are Messrs. Cornish Bros., Ltd., Birmingham.

The Pagoscope—Some time ago we called attention to this instrument as an indicator of the probable occurrence of frost even at a time when the thermometer is several degrees above the freezing-point. We advert to the subject again for the purpose of suggesting to the manufacturers that the water-cistern is too shallow, and that it is placed on the hinder side of the instrument, instead of in front, where it would be more accessible. If it were attached to a post, and not against a north wall, this objection would not apply.

A "Country-in-Town" Exhibition.—A very full attendance gathered at the first meeting to consider the proposal to hold an exhibition in the East End, intended to demonstrate what can be done towards the conversion of London into a garden city, or, at all events, a city of gardens. The meeting was held in the council room of the Agricultural and Horticultural Association, Long Acre, with Canon Barnett in the chair. Letters of hearty approval from many representative men and women were read by Mr. Edward Owen Greening, who acted as convener of the gathering. Mr. Joseph Fels, who has given the free use of a farm to the "unemployed" committee, sent with his approval an official report of a successful association in Philadelphia which takes in hand vacant lots of land in that city pending their requirement for building purposes, and converts them into gardens, some beautiful, and some profitable. It was resolved to hold an exhibition during the second week in July at the Whitechapel Art Gallery, kindly lent by the trustees for the purpose. The exhibition will include models, photographs, and designs of roof-gardens, streets and frontages beautified with trees and house climbers, forecourts and back-yard gardens, waste-grounds converted from barrenness, window-boxes, climber-clad porches, archways and screens, small greenhouses and summer-houses, rockeries and grottoes, suburban allotments, railway-stations and embankments rendered pleasant with shrubs and flowers, and views of towns at home and abroad where successful floriculture has been made to brighten the life of cities. The Hon. H. A. Stanhope was elected President. About twenty-five names were nominated for the first council, and a working executive of ten elected, with Canon Barnett as Chairman, and Mr. E. O. Greening as Vice-Chairman. Mr. Campbell Ross and Mr. E. O. Greening were elected Honorary Secretaries.

Guides on Sale at the Royal Botanic Gardens, Kew.—In compliance with a request from the Director, we have pleasure in publishing the following particulars in reference to the publications issued at Kew, the prices of which have in most cases been reduced:—

Key Plan and Index to the Royal Botanic Gardens, Kew. 6th ed. 1904. Price 2*d*. By post 2½*d*.

Official Guide to the Museums of Economic Botany. No. 1: Dicotyledons and Gymnosperms. [Under revision.]

Official Guide to the Museums of Economic Botany. No. 2: Monocotyledons and Cryptogams. 1894. Price 4*d*. By post, 5*d*.

Official Guide to the Museums of Economic Botany. No. 3: Timbers. 2nd ed., revised and augmented. 1893. Price 3*d*. By post, 4*d*.

Official Guide to the North Gallery. 5th ed., revised and augmented. 1892. Price 4*d*. By post, 5½*d*.

Hand-list of Trees and Shrubs grown in Arboretum [excluding Coniferæ]. 2nd ed. 1902. Price 10*d*. By post: Inland, 1*s*. 2*d*.; Foreign and Colonial, 1*s*. 5*d*. Part II. [1st ed.] Gamopetalæ to Monocotyledons. 1896. Price 8*d*. By post, 10½*d*.

Hand-list of Coniferæ grown in the Royal Gardens. 2nd ed. 1903. Price 3*d*. By post, 4½*d*.

Hand-list of Trees and Shrubs [2nd ed.] and Hand-list of Coniferæ [2nd ed.] in one volume, cloth boards. Price 1*s*. 7*d*. By post: Inland, 1*s*. 11*d*. Foreign and Colonial, 2*s*. 2½*d*.

Hand-list of Ferns and Fern Allies cultivated in the Royal Gardens. [Under revision.]

Hand-list of Herbaceous Plants Cultivated in the Royal Gardens. 2nd ed. 1902. Price 1*s*. 9*d*. By post: Inland, 2*s*. 2*d*.; Foreign and Colonial, 2*s*. 6½*d*. Cloth boards, price 2*s*. 6*d*. By post: Inland, 2*s*. 11*d*.; Foreign and Colonial, 3*s*. 3½*d*.

Hand-list of Orchids Cultivated in the Royal Gardens. 2nd ed. 1904. Price 8*d*. By post, 10*d*.

Hand-list of Tender Monocotyledons cultivated in the Royal Gardens. 1897. Price 8*d*. By post 10½*d*.

Hand-list of Orchids [1st. ed.] and Hand-list of Tender Monocotyledons, in one volume, cloth boards. Price 1*s*. 6*d*. By post, 1*s*. 10½*d*.

Hand-list of Tender Dicotyledons cultivated in the Royal Gardens. 1899. Price 1*s*. 8*d*. By post: Inland 2*s*.; Foreign and Colonial, 2*s*. 1*d*. Cloth boards. Price, 2*s*. 2*d*. By post: Inland, 2*s*. 6*d*.; Foreign and Colonial, 2*s*. 7*d*.

Mycologic Flora of the Royal Gardens, Kew. 1897. Price 4*d*. By post 5*d*.

Money Orders to be made payable at the Kew Post Office to W. Watson, Curator, Royal Botanic Gardens, Kew.

Guide-Books Received.—We notice on our table the Great Eastern Railway Company's *Tourist Guide to the Continent*, edited by Percy Lindley. The book is illustrated and contains maps, and several new features are introduced, making this edition still more interesting than those preceding it. We should suggest that the reprinted letterpress be revised on the occasion of the publication of the next edition: there is, for instance, no longer a "comfortable little Hôtel Tête d'Or" in the Rue de Lille at Ypres, nor has there been one for some few years past.

—— The London and South-Western Railway forward an official *Illustrated Guide and List of Hotels, Boarding Houses, Apartments, and Business Houses*, that should prove very useful to intending travellers in the direction indicated. A map accompanies the publication, which treats of many beautiful and interesting localities.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

APRIL AND MAY FLOWERS IN THE SOUTH-WEST.—The disastrous gale of the last day of April (which blackened all the young foliage) and the drying, easterly winds and absence of rain experienced for some weeks were adverse to vegetation, but nevertheless spring flowers have afforded a bright display. Clianthus puniceus, on a south wall, has been a blaze of crimson, and its white variety has also flowered well. Neviusia alabamensis, which was much written about some twenty years ago, but is now rarely met with in gardens, produced its curious flowers, entirely lacking petals, and with crowded white stamens set in green bracts. The single Kerria, far rarer than its double variety, has borne its orange-coloured flowers and Rhodotypos kerrioides its white blossoms. Among the other flowering shrubs that have been in bloom during the past two months the most noteworthy have been Veronica Hulkeana, at its best in mid-May, a plant over 5 feet in height and 7 feet across, growing against a wall, and bearing over 200 flower-sprays, some of them 2 feet in length. It was a perfect cloud of lavender, a most beautiful sight. A bush of Dimorphotheca Ecklоni, 4 feet in height and 5 feet through, which has been unprotected in the open for the last two winters, is now charming in the sunshine with its countless white, violet-scented flowers. Olearia nitida is so completely covered with its clusters of white, Hawthorn-like blossoms that scarcely a leaf is visible, and is a very showy shrub; but O. argophylla, also in bloom, suffers by comparison. Solanum aviculare is bearing the first of its lavender-purple, golden-centred flowers, 2 inches across, to be followed by yellow, egg-shaped fruits; and S. crispum has been smothered in bloom for the past three weeks. Weigela (Diervilla) Conquete is a fine variety, bearing pale-pink flowers quite 2 inches in diameter. Another very pretty shrub is Deutzia kalmiæflora, which has borne its flesh-coloured, rose-edged blossoms in profusion. Helianthemum formosum, formerly Cistus, is daily expanding its bright-yellow, maroon-blotched flowers, and the rare Cistus ladaniferus maculatus (true) has opened its great white claret-spotted blooms fully 5 inches across. Of Calceolarias the charming C. violacea and C. Burbidgei are now in flower. Towards the end of April the beautiful pale sulphur-coloured Gladiolus tristis was in bloom. The scent emitted by the blossoms at night is delicious. It increases rapidly by bulblets, and also by seed, which is freely produced. In Mr. Archer-Hind's garden I noticed hundreds of seedlings coming up around the old clumps. In a noted Cornish garden I have seen this Gladiolus nearly 5 feet in height, but with me it rarely exceeds 3 feet. Ixiolirion montanum has been lovely for the past fortnight. It is an improvement upon I. tataricum, which is growing close by. Its flower-spikes reach a height of 28 inches, while those of I. tataricum rarely exceed 18 inches. Its flowers are larger and more freely borne, twelve often being carried on the same scape, while I. tataricum seldom bears more than six, and is a fortnight later in flowering. The Sparaxis and Ixias have been very gay, S. Fire King, scarlet with yellow eye, being especially brilliant. Homeria collina has been lovely, and Camassia Leichtlini, over 4 feet in height, has had a telling effect with its ivory-white flowers, while the curious Feather Hyacinth (heliotrope-blue) imparts a pleasing colour to the border. Rosa xanthina, syn. R. Ecæ, is bearing its yellow flowers; enormous clumps of Libertia formosa, 5 feet in height and over 6 feet through, are holding aloft hundreds of white flower-wands; Ranunculus myssanus has been very bright, and Rehmannia angulata is bearing its deep rose-coloured Gloxinia-like blossoms. Bushes of Agathæa cœlestis have been blue with flower for many weeks, and will bloom well into the winter, as will Erodium pelargonifolium, which here is in flower for nine months out of the twelve. Linum narbonense has commenced to show its clear blue colour; Anthericum liliastrum giganteum, its spikes of pure white blooms, the first of the Day Lilies; Hemerocallis flava is in flower, and the earliest of the Peach-leaved Campanulas, Backhouse's variety, has opened its great white bells. This fine plant unfortunately proves to be of tender constitution, scarcely increasing at all, being very different in this respect from the vigorous, semi-double C. Moerheimi, another excellent variety. Of dwarf plants Androsace lanuginosa, over 3 feet across, is smothered in blossom, and Æthionema pulchellum hard by is blooming freely. Phlox divaricata is beautiful with its grey-blue flowers, and other dwarf Phloxes, such as the Bride, Vivid and nivalis are very pretty. Antirrhinum glutinosum and A asarinum, hanging over rocks, are displaying their white-and-sulphur flowers, and the Sun-Roses, especially the double crimson, are very bright. Early in April Shortia galacifolia was charming and is now followed by Ourisia coccinea holding dozens of its bright scarlet flower-spikes, and by the Ramondias, growing in the chinks of the rocks, over which Arenaria balearica spreads a tracery of green, spangled with countless tiny white stars; and A. montana hangs its larger flowers. Anemone ranunculoides has borne its yellow blossoms, the orange Lithospermum hirta and the deep-blue L. prostratum are in full flower; the dwarf Aster Stracheyi, earlier and larger than A. alpinus, is in profuse bloom; Dianthus Emilie Paré is crowded with salmon-pink blossoms, and a large patch of the pretty Daisy Alice is covered with dozens of its quilled blooms. Viola cucullata alba was at its best three weeks ago; but Sisyrinchium bermudianum is in full flower, and Morisia hypogæa is bright with its yellow blossoms, and in a damp spot Claytonia sibirica is flowering. Arctotis aureola robusta, growing at the top of a retaining wall, is bearing a number of deep orange flowers nearly 4 inches across, and A. aspera arborescens, close at hand, is also in bloom, as are Gazania longiscapa, 3 feet across, brilliant in the sunshine, Ajuga Brockbanki, and the little night-scented Stock, Hesperis tristis. Of Saxifragas, Guildford Seedling has been fine, and S. Macnabiana, S. longifolia, S. pyramidalis, and others are in flower. Tropæolum pentaphyllum has opened its first blooms; and three annuals, that invariably spring up from self-sown seed—Collomia coccinea, Omphalodes linifolia and Calceolaria mexicana—are coming into bloom. *S. W. Fitzherbert, Cornwall.*

THE WEATHER AND THE FRUIT CROPS.—The month of May, fine enough from a meteorological point of view, proved to fruit-growers one of the most disastrous months in my memory. The strong southerly gale of May 1 irretrievably bruised and twisted the fruit-stems of the better sorts of Pears, and the drought, hot sun, cold winds, and arid air, which prevailed through the rest of the month, wrought sad havoc among Plums and Cherries. As a result it is now certain that in this district there will be a shortage of all the best kinds of large fruits, although common Apples promise well. Among small fruits the prospect is not so bad. Strawberries and Raspberries will be generally small, although the former may be a large crop. Currants of all kinds promise well, as is also the case with the Loganberry. In general the fruit crops will not be appreciably better than they were in 1903, which was one of the worst years on record in West Middlesex.

Table of Averages (Normal Crop being estimated as 100).

Wall Peaches, Nectarines, and Apricots	120
Orchard Peaches, Nectarines, and Apricots...	5
Wall Pears and Plums	5
Orchard Pears (dessert)...	5
Orchard Pears (common sorts)...	40
Orchard Plums (dessert)	10
Orchard Plums (common sorts)	25
Orchard Cherries...	5
Wall Cherries (Morello)...	90
Orchard Apples (dessert)	50
Orchard Apples (cooking)	120
Orchard Quince	140

A. Worsley, Mandeville House, Isleworth, Middle.

A DRY MAY.—On May 1 I registered 0·08 inch of rain; on the 2nd the same amount was recorded, and on the 3rd it was 0·12 inch—a total of 0·28 inch. From then until the end of the month we had twenty-eight consecutive rainless days, when not a trace could be found in the gauge. On June 1, 0·02 inch was recorded; the same on the 2nd; on the 3rd 0·01 inch, and 0·02 inch on the 4th; while at the time of writing all promise of the much-needed downfall seems to have failed us. This is only 0·35 inch for 35 days, and upon all the lighter soils the outlook is most serious. Some growers in this district will commence gathering Peas in a few days, and it is apparent the crop will be a very short one, though a considerable acreage is devoted to this vegetable in the Vale of Evesham. The heavy soils show less effects of the drought where they have been thoroughly cultivated, but even upon them the strain is beginning to tell severely upon both fruits and vegetables. For cleaning foul land the season is an ideal one, but all spring-planted trees are passing through a great ordeal. Surface cultivation, mulching, and even watering have had to be resorted to in many places. *R. L. Castle, Evesham, June* 3.

—— Since writing the preceding remarks the long-desired rain has reached us. We have had a steady continuous downpour, which has already exceeded half an inch. The rain has improved prospects greatly. *R. L. C.*

SCHIZANTHUS WISETONENSIS.—For making an effective as well as an economical display in the greenhouse during the spring and summer seasons, there are few plants that can compare favourably with this. It is invaluable for decorative purposes, especially to the small amateur gardener, as from a pinch of seed sown in the early part of the year plants can be easily grown that will give a very charming effect for a long period. In the horticultural tent at the Somerset Agricultural Show, held at Bath on May 9, Messrs. James Garaway & Co., of Clifton, exhibited a magnificent group of hybrids, in producing which the variety wisetonensis had evidently been largely used. Not only were these plants well grown and of good bushy habit, but the individual flowers were larger and rounder than those of the variety mentioned, while the colours were exceedingly varied, and exquisite in tone, varying from purple and gold, mauve, rose, pink, and creamy-white. I understood that Mr. W. H. Bannister, of Ote House Gardens, Westbury-on-Trym, was the fortunate hybridist. If so he is to be congratulated. *T. Challis, Wilton House Gardens, Salisbury.*

EREMURUS.—Three years ago, I think, Mr. Wallace, of Colchester, gave me the tuber of an Eremurus which he considered to be a form of E. Bungei, but which from its early flowering he proposed to call E. Bungei præcox. The plant is now well established with me. So far as I can see it differs in no specific way from E. Bungei, and yet it flowers regularly very early, at about the same time as E. robustus. The name, therefore, seems quite justified. It is a grateful addition to the garden, and may serve as the means of giving us interesting hybrids. *M. Foster, Shelford, June* 5, 1905.

THE KEW GUILD.—I observe that in the report of the dinner of the Kew Guild, Mr. Watson, the Curator of the Royal Botanic Gardens, is stated to have suggested that the energies and influence of the Guild should be "exerted on behalf of the less fortunate of professional gardeners, and in such a manner that their legitimate grievances might be remedied." Had I been present I should certainly have raised my voice against the Guild doing anything of the kind. I gave my approval to the formation of the Guild in 1893 in a letter which has frequently been described as its charter. I did so because I thought that it would "have the effect of consolidating the *esprit de corps* which already exists amongst our young men," and I did not doubt that this would be "of great benefit to the establishment." I think my expectation has been realised, and it is for that reason that I view with great regret a proposal that the Guild, to use its own words, should "dabble in horticultural politics." This is departing widely from its original purpose, and would, I am sure, affect its interests injuriously. The Guild from its start has never had an official character. It is a purely domestic, I might almost say a family affair, confined to those who have been attached to one establishment. Its annual gathering I have always insisted was of a purely private character, having for its principal object the opportunity of bringing together old but often widely scattered friends, and giving the younger generation of Kew men the opportunity of seeing and making the acquaintance of the veterans. Such gatherings are common in the Army and the Universities, and their charm and value lies in their purely private character. That in the case of the Guild was destroyed when the practice began of reporting what passed in the Horticultural Press. As this seemed to me to be a breach of confidence, it precluded my being present at the dinner this year. It appears to me to be little short of absurd for those who have been connected with one establishment to arrogate to themselves the task of taking charge of the interests of the gardening profession at large. I am quite sure that Kew men would resent it if the attempt were made by those connected with one of the large horticultural firms. In my opinion it is peculiarly improper in the case of a Government establishment. Persons in Government employ have to serve under Ministers who hold widely differing political opinions. The recognised discipline of the service precludes its members from engaging in active political movements, or from airing their political sympathies. The proposed action would be embarrassing to the branch of the Government responsible for the administration of Kew, and would, I think, provoke hostility to it elsewhere. It would also, I think, be injurious to the interests of Kew men. I do not think that it would be possible to bring the scattered units of the gardening profession under the control of anything like a trades-union. If it were, I think anyone would be shy of engaging a gardener who had at his back an organisation proposing to interfere between employer and employed. I should be sorry to see the Kew certificate regarded rather as a danger-signal than as a recommendation. No one is, or has ever been, more anxious to raise "the status of gardening" than myself. But this must be done by raising the standard of competence. When the gardener is worth more he will get more. He must learn that diligent professional study and its intelligent application will in the long run land him in a better position than mere adherence to rule-of-thumb practice. *W. T. Thiselton-Dyer, Kew.* [The proceedings at the first annual meeting of the Guild, as well as of all subsequent meetings, were reported in the Press. ED.]

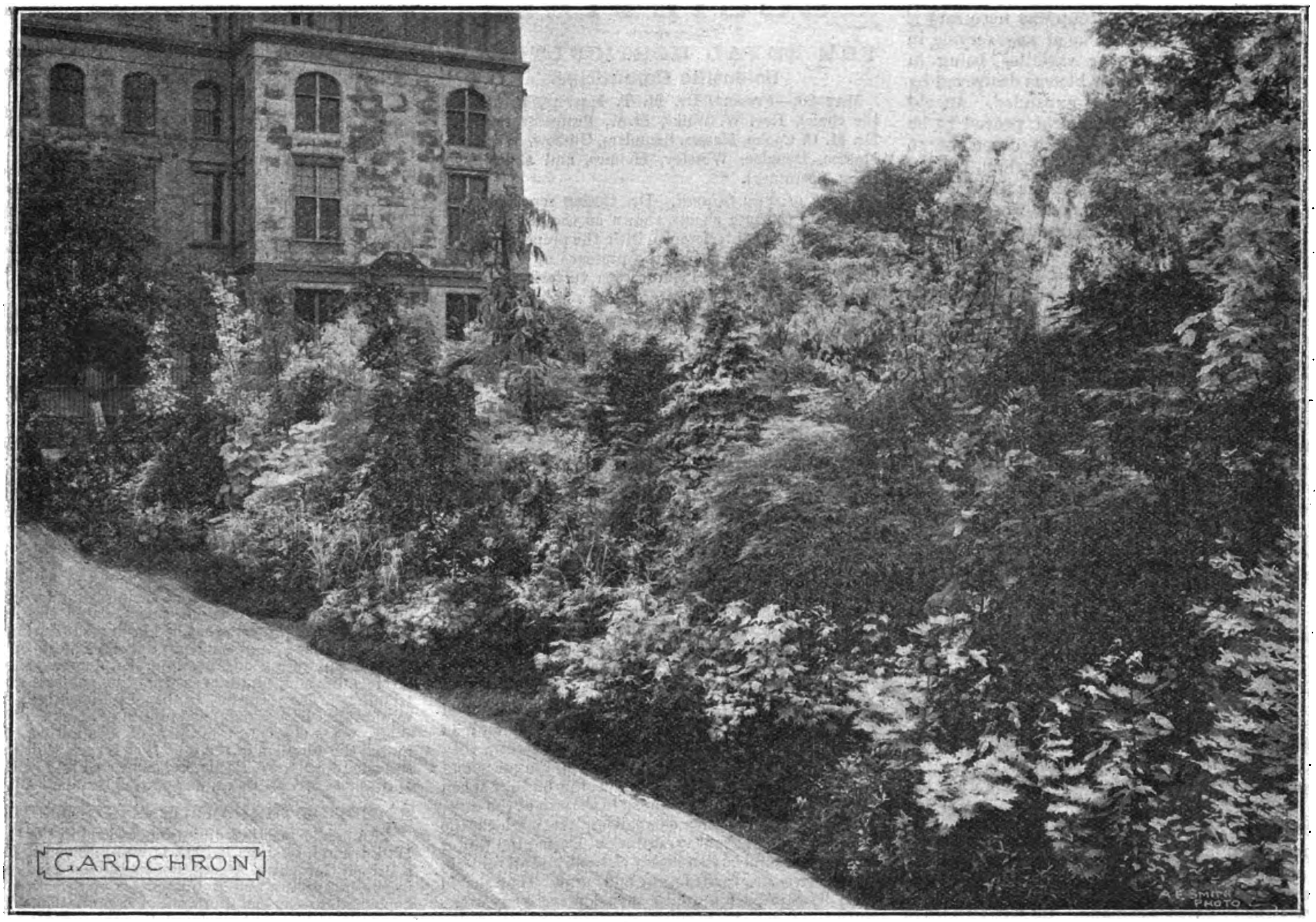


FIG. 154.—VIEW OF MESSRS. CRIPPS' ACERS AND OTHER PLANTS EXHIBITED AT THE TEMPLE SHOW AND AWARDED THE VEITCHIAN GOLD CUP FOR THE MOST GENERALLY INTERESTING EXHIBIT. (*See ante, p.* 350.)

MANURE-WATER AND PEACH-TREES.—I think that had Mr. Ward read my article on this subject with more attention than he seems to have done, he would not have penned that sentence (see p. 324) relating to the cause "of short-lived, bare, unproductive, and stunted Peach-trees that are frequently met with." Moreover, how can he assert that "this condition of the trees is put down to every cause but the right one"? My knowledge of Peach-culture in this country is not so extensive as to enable me to define a cause in every individual case, neither can Mr. Ward, without making an investigation and being afforded an account of the course of treatment pursued for a number of years by perhaps different gardeners. In my article I distinctly stated the necessity of affording sufficient moisture to the border in the period March to September. Mr. Ward begins to apply water a month earlier, but that is a matter of little moment. The Peach-borders Mr. Ward alludes to, presumably those at Longford Castle, he says faced south, south-west, west, and even east; and further on he states that the borders were hard, and faced southwards! Most of us would suppose the border of an east wall to slope eastwards, and that of a west one to slope westwards. Now a south-west border, getting the rainfall from the wettest quarter, would receive enough of the natural rainfall, not to speak of snow, to satisfy the needs of the Peach or any other trees planted on that aspect, excepting the soil were light, shallow, or very porous, when water might be demanded early in the spring and at intervals during the summer. Much would depend on the locality, the aspect of the garden, the part of the country, whether south, east, west, or north, which are matters that I touched upon briefly, which every sensible gardener would naturally take note of, and to which he would mould his practice. As for the rain only wetting the surface of a border, that state of things would not occur if the crust were kept in a loose, friable condition by occasionally pointing it over an inch or two deep with a digging-fork. I have always made use of stout planks laid in a row about 3 feet from the wall, and by this means I have kept the soil from being unduly consolidated. Most gardeners know that a lightly or uncropped tree will run to wood as a rule, if it be healthy, and to afford such a tree extra feeding is one way of increasing the evil of gross shoots and consequent unfruitfulness. Why induce grossness at all, and then use the knife for its reduction? As for my advice with regard to the use of spare manure-water, your correspondent errs in stating that I advised its use on various crops in the autumn, winter and spring, for in point of fact no season was specified. *F. Moore.* [Enough has been said on this subject. ED.]

FLORISTS' FLOWERS.

EARLY-FLOWERING CHRYSANTHEMUMS.

The early-flowering Chrysanthemums as a section may be said to have commenced with the introduction of two varieties of the Chusan Daisy—the forerunner of the Pompon type—by Mr. Robert Fortune in 1846. They were considered by growers of the large-flowering varieties to be too small to command attention; but their merits as pot-plants were soon recognised as the varieties increased, and by 1869 the late Mr. John Salter catalogued fifteen varieties blooming from June till October.

The late Mr. William Piercy, of Forest Hill, who took great interest in the early-flowering section, held that such a group was necessary if the Chrysanthemum was to be of any service in the garden, the November varieties being in great danger of having their blooms destroyed by frost before they were well expanded. An old yellow variety named Drin Drin proved to be early-flowering, and this with a dozen or so others, apparently of Continental origin, formed the earliest group of such precocious varieties.

A remarkable advance was made when in 1879 the late Mr. Robert Parker discovered, during the summer of that year in a lady's garden in Wales, the well-known and still popular variety Mme. C. Desgranges. Mr. Parker was given two plants of it, which he increased and was able to distribute the variety. It was regarded as of French origin, and was believed to have been raised by Mons. Boucharlat. Then soon followed its sports—George Wermig (yellow) and Mrs. Burrell (primrose). George Wermig appeared the very next summer after the introduction of Madame C. Desgranges, and with remarkable simultaneity it was found to have sported in six other places. Later in time George Wermig threw a deeper yellow sport, which received the name of Mrs. Hawkins. The adoption of the Desgranges section for decorative and market purposes led to the introduction of other early forms, and now the list of those which bloom in September and October is a very long one. Continental and home raisers have vied with each other in the production of acceptable varieties, while notable additions have resulted in the character of sports.

May is the month in which it is advised that the early Chrysanthemums be planted in the open for garden decoration. But if this work has not been already carried out, anyone interested in them will still find the best results are secured by making a plantation of a selection of varieties, so as to afford an opportunity for comparison. The plan adopted by Mr. William Sydenham at Tamworth is a very good one. He has a series of beds, 12 feet or so in length and about 4 feet in width; these beds run out at a right angle from a main walk, and each bed contains three or more varieties, planted in threes or half-dozens. There is of course a narrow path between each pair of beds. As Mr. Sydenham is an early-Chrysanthemum specialist, he has an extensive collection of varieties; and as in planting-out he observed an alphabetical arrangement, he had varieties of tall growth and later in flowering in juxtaposition with those of quite dwarf habit and early to bloom; the effect as a whole was confusing, and the tall growers hid from view the dwarf, compact plants.

If the soil in which the plants are to be placed has not been previously dug over and manured, it should be deeply loosened and some well-decomposed manure worked into it. Many of the dwarf early-flowering September and October varieties are of a free-branching growth, and the plants should have ample space in which to develop; 3 feet apart each way is not too much.

Some of the best dwarf varieties which bloom in August, September, and October, will be found in Bobby (white with pink lines), Carrie (deep yellow; a perfect gem), Goacher's Crimson (bright chestnut-crimson), Doris Peto (pure white), Horace Martin (deep yellow), Jimmie (crimson-purple), Kitty (a very pleasing shade of pink), Mme. Marie Masse (lilac-mauve), Market White (white), Mrs. A. Willis (yellow, striped red), Mrs. Mollinson (bright bronzy-yellow), Mytchett Pink (pink), Mytchett White (white), Norbet Puvrez (golden salmon), Polly (deep orange and amber), and Satisfaction (ivory-white). The foregoing vary in height from 1 foot to 3 feet.

Among the Pompon varieties are several which bloom as early as June, and in July and August; they are generally dwarf and make charming bushes heavily laden with blossom, so free are they generally. *R. D.*

SOCIETIES.

THE ROYAL HORTICULTURAL.

Scientific Committee.

MAY 23.—*Present:* Dr. M. T. Masters, F.R.S. (in the chair), Rev. W. Wilks, M.A., Professor Boulger, Dr. M. C. Cooke, Messrs. Saunders, Güssow, Worsdell, Massee, Douglas, Worsley, Holmes, and Chittenden (Hon. Secretary).

Shoots of Yew injured.—Dr. COOKE reported that the injury to these shoots, shown at the last meeting, was due to the interference with the proper performance of their functions by the presence of a complete covering of the alga, Pleurococcus vulgaris, on their upper surface.

Diseased Cucumber Leaves.—Mr. MASSEE reported that the leaves sent to the last meeting by Mr. Terry were attacked by the fungus Cercospora melonis, Cooke.

Raspberry Moth.—Mr. SAUNDERS reported on some shoots of Raspberry in which the buds had failed to grow:—"The buds on the Raspberry were attacked by the caterpillars of a small moth, the 'Raspberry-moth' (Lampronia rubiella) (see fig. 118, p. 288). Any of the canes which are badly infested should be cut out at once and burned; if only a few buds are affected they should be picked off and treated in the same way; in doing this however be sure that the grubs are not left in the cane. The moths lay their eggs in the flowers of the plants, and the young caterpillars make their way into the core of the fruit, where they do not appear to do any harm. Later on they let themselves down by silk threads, or crawl down, to the stool of the plant, where they hide among dead leaves or rubbish in cracks of the soil, or in some inequality in the bark of the canes, &c. Each then spins a thin silken cocoon round itself, and in this position passes the winter; in March, earlier or later according to the season, they leave their winter quarters and crawl up the canes and make their way into the base of the buds. When fully grown they form a chamber in the pith of the cane, in which they become chrysalides, from which the moths emerge in about three weeks. During the winter the stools should be thoroughly cleaned, and all rubbish, dead leaves, &c., carried away and burnt. They should then be earthed up, which should prevent any caterpillars still in the stools from ascending the canes, the bases of which should be painted with a thick solution of paraffin emulsion as a further safeguard."

Scale on Cotoneaster.—Mr. SAUNDERS also reported on insects on Cotoneaster sent by Mr. Bunyard: "These are badly attacked by the 'Mussel-scale' (Mytilaspis pomorum), and to a less degree by the 'brown Peach-scale' Lecanium persicæ var. sarothamni). I should cut out as many of the infested branches as can be spared, and then towards the end of May and again early in June spray with paraffin emulsion, taking care that the insecticide reaches the back of the shoots that are against the wall; another spraying might be given with advantage about the middle of June. The particular reason for spraying at this time of year is to destroy the young insects as soon as they begin to leave the shelter of the scale of their mother, and to find fresh quarters for themselves. If it were not an evergreen plant, I should recommend spraying with a caustic alkali-wash in the course of the winter, but a good spraying with paraffin emulsion then could not be otherwise than beneficial, and it would prove more efficacious if the plant were protected by a mat afterwards, to prevent the insecticide being washed off by the rain."

New Primulas.—The following newly-introduced Primulas from Western China were exhibited by Messrs. J. VEITCH & SONS:—Primula vittata, Bureau et Franchet; P. deflexa, Duthie; P. nivalis farinosa, Schrenk; and P. Cockburniana, Hemsley. On the motion of Dr. MASTERS, seconded by Mr. DOUGLAS, a Botanical Certificate was unanimously awarded to P. Cockburniana, a Chinese species bearing flowers of an orange-colour, reminding one of the colour of Hieracium aurantiacum, quite a novel colour in Primroses.

Double-coloured Spathe in Richardia Elliotiana, and quite distinct in colour from any previously known Primrose.—Mr. BATCHELDER, of Ipswich, sent photographs of a plant bearing a second spathe completely coloured yellow, unlike those usually exhibited, where the second spathe has usually a large yellow blotch.

Seeds from Caucasus.—Mr. S. HOGG sent seeds of Lablab vulgaris and Staphylea colchica, requesting the names.

Diseased Potatos.—Mr. Z. GRAY, F.R.H.S., sent Potato tubers badly affected by the black scab disease, which has spread so much in this country lately.

Laurel leaves injured.—Mr. SAUNDERS showed some leaves of Laurel, each of which contained large numbers of holes. Dr. Cooke undertook to examine them.

Phyllocactus.—Mr. WORSLEY showed several fine forms of Phyllocactus, and remarked upon the difficulty there is in fixing the origin of the garden Cacti. It appears that two very unlike species are sent out under the name Phyllocactus crenatus, one having scales up to the base of the flower, the other having a long naked ovary. Garden forms appear to show very little trace of the latter character. It was decided that at a future meeting the question of the origin of these forms should be brought forward.

Cereus amecaensis.—Mr. WORSLEY also showed a flower of this very fine white-flowered species from Mexico.

BRITISH GARDENERS' ASSOCIATION.

JUNE 1.—The first annual meeting of the members of the British Gardeners' Association was held in the Memorial Hall, Farringdon Street, London, E.C., on the above date. Dr. M. T. Masters, F.R.S., presided, and there were upwards of sixty members present. It was generally agreed that the attendance would have been greater if the meeting had been held on the previous day, as many of the country visitors to the Temple Show had returned, and the exhibitors were busy at the time packing their plants for transmission home. Dr. Masters congratulated the Association on the progress that had been made during the year. He felt every confidence that the objects of the Association were good, therefore the members should not feel discouraged, for eventually those objects would triumph. They sought to benefit themselves, but would rigorously refrain from injuring others.

Mr. Geo. Gordon, Chairman of Committee, then moved the adoption of the following report, which was seconded by Mr. W. Dallimore, supported by Mr. E. F. Hawes and Mr. K. Drost, and carried unanimously.

REPORT OF THE COMMITTEE OF SELECTION.

AT a public meeting of gardeners held in the Essex Hall, Strand, on June 1, 1904, it was resolved to form a British Gardeners' Association on the lines indicated in the prospectus, and a Committee of Selection was appointed to conduct the work of organisation. This Committee consisted of the following gentlemen:—Messrs. Gordon, Curtis, Divers, Drost, Jordan, Pearson, F. K. Sander, J. Weathers, G. H. Clack, W. P. Wright, R. J. Frogbrooke, Witty, Lawson, Leech, Cadman, Close, Brooks, Newberry, T. H. Candler, Isbell, Taylor, Hales, T. Winter, W. J. Bean, Stocks, and Watson. The Association is greatly indebted to the Horticultural Club for permission to use the Club Room at the Hotel Windsor for Committee meetings. After a year's operations the Association has developed slowly but steadily in the direction generally desired. Twenty-eight public meetings have been held and addressed by delegates from the Committee in horticultural centres throughout England and Wales. The result of these meetings has been in many cases the formation of a branch of the Association, and further development in this direction only awaits the stimulus of the Executive Council. The number of members enrolled up to May 25 was 632. These are distributed throughout the country as follows:—England, North, 131; England, South, 332; Wales, 98; Scotland, 48; Ireland, 16; Colonies and abroad, 7; total, 632. [Not National distribution:—There are, for example, many more Scotch members than the above table indicates.]

It is interesting to note that by far the majority of the members at present are employed in private gardens, whilst only very few of the many thousands engaged in commercial gardening have as yet joined. This is no doubt largely due to the difficulty of making the Association and its aims known to these men; and also, it is to be feared, to the opposition some nurserymen have shown to the Association, an opposition which has gone so far as to forbid their *employés* to take any part in the movement. It is to be regretted that not a few head gardeners have displayed the same kind of antagonism to the Association, evidently from a belief that its operations would interfere with them in the control and management of their charges. The exact classification of the gardeners who are now members is as follows:—Head gardeners, 273; single-handed gardeners, 33; foremen, 121; journeymen, 107; curators, park superintendents, lecturers, pressmen, 36; nurserymen and nursery foremen, 50; disengaged, 12; total, 632.

The expenses incurred by the Committee in the work of promotion have been almost covered by donations received for the purpose. In addition to the meetings held the Committee have distributed a large number of pamphlets, application forms, and rules, but the have found poor results arise from the distribution of printed matter alone. The firmly-rooted belief of the majority of gardeners that association and co-operation can do nothing to improve their condition or raise the status of their calling cannot easily be shaken. It is evident that only when this Association has demonstrated its capacity for usefulness will the great body of professional gardeners actively support it. To do this effectively funds are urgently needed. The Committee, therefore, appeal for the liberal support of those who are in a position to afford it. If £1,000 could be obtained it would enable the Executive Council to commence operations on a scale that would command respect, and the British Gardeners' Association would then, undoubtedly, in a short time, take its place among those excellent organisations which in this country have done and continue to do so much for the industries they represent. An office in London and a paid Secretary must be provided before any satisfactory advance can be looked for. Up to the present the donations promised amount to £81.

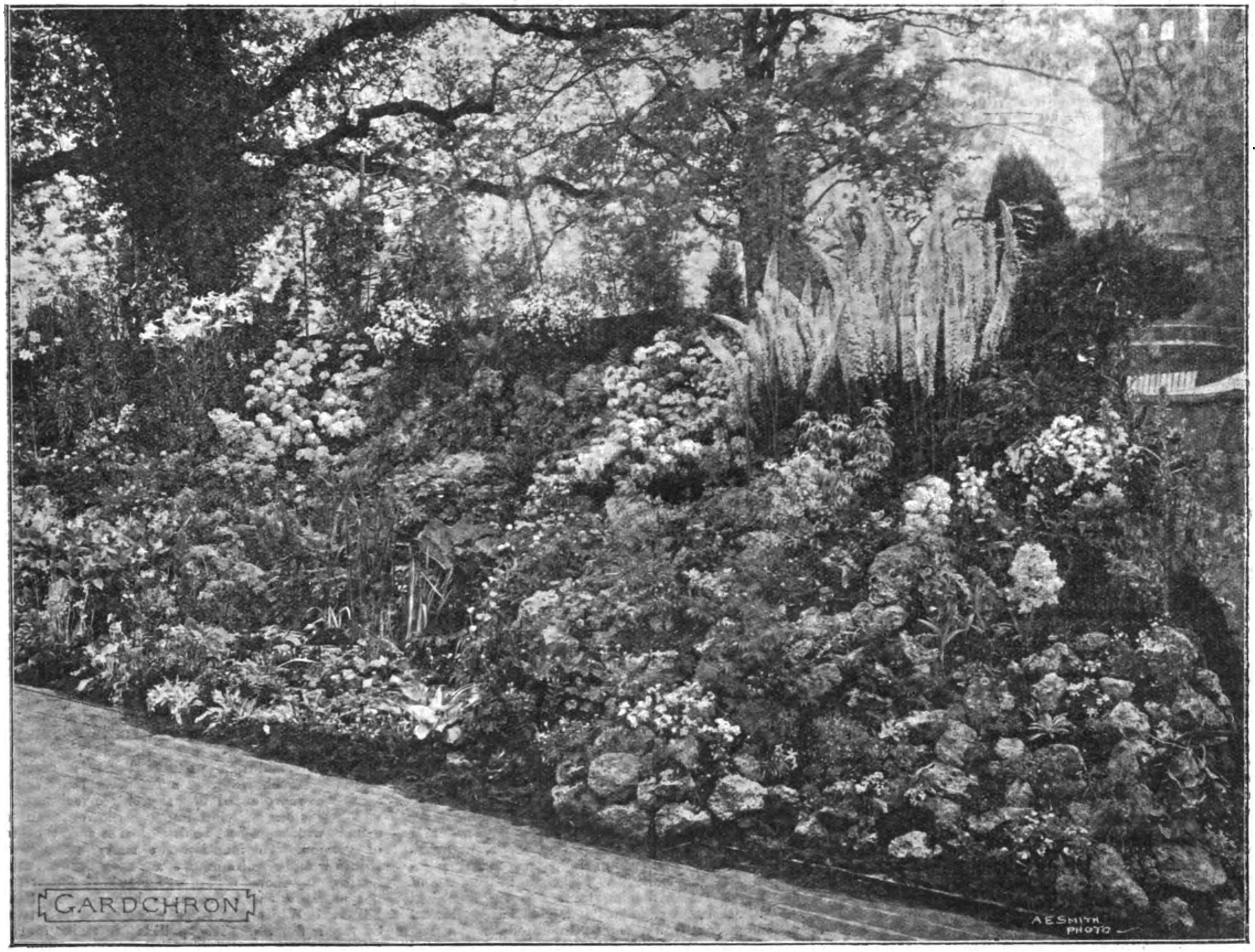


FIG. 155.—VIEW OF A PORTION OF MESSRS. CUTBUSH'S ROCKERY EXHIBITED OUT-OF-DOORS AT THE TEMPLE SHOW.

(See Report in our last issue.)

STATEMENT OF ACCOUNTS.

Receipts.

	£	s.	d.
Donations to Promotion Fund	68	4	6
Registration Fees and Subscriptions ...	158	7	6
	£226	12	0

Expenditure.

	£	s.	d.
Printing, Typing and Stationery	31	17	0
Postage	19	3	0
Delegates' expenses (Travelling, &c.) ...	18	12	0
Hire of Halls	5	0	0
Expenses of Yorks Branch	3	0	0
Carriage	0	10	0
Returned Fees to rejected Candidates ...	0	10	0
	£78	12	0

Balance ... ... £148.

DONATIONS PROMISED.

	£	s.	d.
A Friend	25	0	0
F. Sander	20	0	0
R. Sydenham	10	0	0
H. J. Cutbush	10	0	0
Miss Y. T. Forster (2nd donation)...	10	0	0
W. J. Bean	5	0	0
R. P. Ker	1	0	0
	£81	0	0

Is it possible that amongst the weathy patrons of horticulture there is not one who is sufficiently in sympathy with its workers and the effort now being made to better their condition to induce him to advance the amount required to start us? Four thousand members would mean £1,000 in subscriptions and registration fees, and surely these would be forthcoming in a short time if only the Association could make a strong effort from a position of security.

Amongst those who have been most active in the promotion of the movement in the provinces special mention should be made of Mr. H. A. Pettigrew, Cardiff; Mr. W. Hall, Sunderland; Mr. W. L. Deedman, Birmingham; Mr. A. Gaut, Leeds; Mr. G. Carver, Leeds; Mr. A. G. Chalice, Plympton; Mr. D. Bliss, Swansea; Mr. J. Coutts, Killerton; and Mr. C. Girdham, Altrincham.

The support accorded to the movement since its initiation by the horticultural press has been most gratifying. This alone should satisfy doubters as to the necessity for an Association, and the genuineness of the present effort. Many employers, amongst them the Right Hon. J. Chamberlain and Lord Windsor, have expressed their sympathy with the movement, and their belief in its power for good. Mr. Chamberlain wrote:—

"*Highbury, Moor Green, Birmingham.*

SIR,—I am desired by Mr. Chamberlain to acknowledge the receipt of your letter of January 20, and to say that he cordially approves of the proposal to establish the British Gardeners' Association, and cordially wishes it success.

Yours obediently, J. WILSON.

W. WATSON, Esq."

The want of faith amongst the gardeners themselves is a most deplorable element, but it has to be overcome, and there is every reason to believe that it will disappear as the objects of the Association become better known.

The election of an Executive Council was conducted in a manner calculated to give general satisfaction, the following circular letter and list of candidates being posted to every member of the Association. The list included thirteen private gardeners, so that members preferring an Executive composed of private gardeners only could have their choice. It is significant that no one selected private gardeners exclusively. The voting paper is reprinted below, the elected candidates being marked with an asterisk. Only 362 voting papers were returned. *June* 1, 1905.

"Election of Executive Council.

Dear Sir,—The Committee of Selection, having decided to proceed to the election of an Executive Council in accordance with the directions stated in the prospectus, beg to submit herewith a list of members who are willing to serve on the Council. They all reside within a short distance of London and are therefore in a position to attend the meetings. You are invited to mark in the list the names of the twelve candidates you prefer, and, for your votes to be recorded, you must return it to me before May 20. In addition to the twelve members thus elected each branch will have direct representation upon the Council.

A public meeting will be [was] held in the Memorial Hall, Farringdon Street, E.C., on Thursday, June 1 (last day of Temple Show), at 8 p.m. W. Watson."

Candidates for Executive Council.

Members of the Present Committee.—*T. H. Candler, Foreman, Warley Place, Great Warley; *G. H. Clack, H. G., Putney Park, Putney; *W. E. Close, Superintendent of Parks, Fulham; *C. H. Curtis (*Gardeners' Magazine*), 68, Whitestile Road, Brentford; R. J. Frogbrooke, Superintendent of Parks, Leyton; *G. Gordon (*Gardeners' Magazine*), Priory Road, Kew; *J. Lawson, H. G., Horticultural College, Swanley; *R. Hooper Pearson (*Gardeners' Chronicle*), 40, Brocklebank Road, Earlsfield; *W. Taylor, H. G., Tewkesbury Lodge, Forest Hill; *W. Watson, Curator, Royal Gardens, Kew; *J. Weathers, Horticultural Instructor, Pymmes Park, Edmonton; *T. Winter, Superintendent of Parks, Marylebone.

Other Members Willing to Serve.—C. F. Bailey, H. G., Angley Park, Cranbrook; J. O. Clarke, H. G., The Poplars, Avenue Road; J. Clark, Foreman, Messrs. J. Waterer & Sons, Bagshot; *W. Dallimore, Foreman, Royal Gardens, Kew; H. O. Etherington, Messrs. J. R. Box & Son, West Wickham, Kent; J. Fulton, H. G., Grims Dyke, Harrow Weald; E. F. Hawes, Superintendent, Royal Botanic Gardens, Regent's Park; P. J. Lucking, H. G., Hopedene, Holmbury St. Mary, Dorking; W. McKechnie, H. G., The Mole House, Hersham, Walton-on-Thames; M. McKiernan, Foreman, Waddesdon, Aylesbury; G. Nottage, H. G., Mill House, Bourne End, Maidenhead; C. Taylor, H. G., Ormeley Lodge, Ham Common; F. T. Woodfield, H. G., The Grange, Nether Street, Finchley.

Only twelve names must be marked.

(*The asterisk* (*) *signifies the successful candidates.*)

Mr. J. Weathers, in the course of a few remarks, emphasised the fact that the Association would not become a mere trades-union, and hoped that no one would be misled into thinking that ordinary trades-union methods would ever become the policy of the British Gardeners' Association.

Mr. J. Harrison Dick moved a vote of thanks to the Committee, which was accorded; and on the proposition of Mr. W. Watson a vote of thanks was passed by acclamation to the Chairman. It was fitting that the meeting should terminate with an acknowledgment of the generous and disinterested efforts Mr. Watson has made on behalf of the objects of the Association, he having done very much more work than any other person. On the proposition of Mr. Jordan (Hyde Park), a hearty vote of thanks was therefore accorded him.

SOCIÉTÉ NEERLANDAISE D'HORTICULTURE ET DE BOTANIQUE.

At a meeting in May of the above Society at Amsterdam, the Floral and Botanical Committee made the following awards:—First-class Certificates for—1. Iris × Juno, new plant, obtained from seed by M. P. W. Voet, nurseryman, of Overveen, near Haarlem. Flowers grey tinged with violet, veined with brownish-purple; of good form. 2. Iris × Pollux, from the same exhibitor. Flowers violet mixed with grey and black, of good form and very floriferous. 3. Cineraria hybrida nana alba, from Messrs. Sluis & Groot, seedsmen, of Enkhuyzen. Flowers pure white, plant dwarf and compact. 4. C. hybrida (of Cactus form), from the same firm. Flowers variously coloured, petals narrow, prettily curved; the plant dwarf and decorative. 5. Rhododendron hybridum Aalsmeer's Roem, new plant staged by M. K. Maarse Dzn., junr., nurseryman, of Aalsmeer. Flowers deep rose, very floriferous and hardy. 6. Trollius Fire Globe, a new seedling raised by Mr. H. J. de Lang, nurseryman, of Oegstgeest. 7. Phaius Blumei Sanderianus, staged by M. C. J. Kikkert, of Haarlem. Flowers browish-yellow, lip purple-and-white. 8. Lælio-Cattleya Hyeana, from M. H. C. Hacke, of Baarn. Flowers rose-coloured, lip dark-purple, form excellent. 9. Lælia purpurata maxima, from M. J. G. Ballego, nurseryman, of Leyden. An excellent variety, with larger flowers than the type.

A Certificate of Merit was awarded for—1. Odontoglossum Adrianæ Ashworthianum, from M. H. C. Hacke. Flowers yellowish-white spotted with brown.

Botanical Certificates for—Lælia Latona, from M. C. J. Kikkert, amateur, of Haarlem. Flowers orange-yellow, and lip purple. Alopecurus lanatus, from M. H. D. Willink van Collen, of Breukelen. A very dwarf plant, greyish-white and downy.

A Bronze Medal was given for a collection of hybrid Cinerarias from Messrs. Sluis & Groot, and Honourable Mention accorded for a collection of Odontoglossums in flower from M. E. A. Lehman, of Amsterdam, and for Cypripedium barbatum from M. F. T. Blöte, of Leyden. *A. J. Van Laren, the Secretary.*

ROYAL BOTANIC.

June 7, 8, 9.—The summer horticultural exhibition of the Royal Botanic Society took place on the above dates. The weather on the opening day left much to be desired, the skies being overcast and threatening. Fortunately, however, the rain kept off, and the public attendance was fairly satisfactory. The exhibition was an advance on that of the previous year, and embraced some excellent exhibits. The show was very comprehensive, for in addition to excellent groups of plants and fruits, there were to be seen the best and latest devices in hot-water heating systems, spraying-machines, irrigators, lawn-mowers, rustic summer-houses, glass structures, garden furniture, and a hundred-and-one sundry articles of garden utility. Exhibits of Roses were a feature, hardy plants were shown extensively, and the exhibit of Messrs. Rivers & Son's fruit-trees was in the best possible condition; indeed, we doubt if they have ever been shown better.

Messrs. Wm. Paul & Son, Waltham Cross, showed excellent Roses in pots and baskets. The variety Spencer, H.P., was in first-class condition. Pillar varieties were freely represented, including the handsome Lady Gay and the Farquhar, which somewhat resembles the last-named, the trusses being as floriferous as that variety, but individual flowers are rounder in shape (Gold Medal).

Messrs. Paul & Son, The Old Nurseries, Cheshunt, exhibited a choice display of Roses, admirably staged, and occupying the end of one of the large tents. Standard and trained varieties of such kinds as Dorothy Perkins, Crimson Rambler, mixed with such beautiful kinds as Conrad F. Meyer and Ulrich Brunner (Large Silver-gilt Medal).

Some nice cut Roses were displayed by Mr. G. Prince, Longworth, Berks. Boxes contained good examples of many of the better-known varieties, such as Bessie Brown, Maréchal Niel, Comtesse de Nadaillac, &c. (Silver-gilt Medal).

Mr. Chas. W. Breadmore, Winchester, exhibited vases of Sweet Peas and plants of Nicotiana Sanderæ (Large Silver-gilt Medal).

H. T. Pitt, Esq., 57, Stamford Hill, London, N. (gr., Mr. F. W. Thurgood), put up an excellent group of Orchids, among which Odontoglossums were a feature. A new Lælio-Cattleya, L.-C. Martinetta, was prominent. The lip is an intense purple colour crowned with cinnamon-rose-coloured petals. Some of the more notable plants were Odontoglossum Wilckeanum, O. Pescatorei, O. Ruckerianum, choice forms of O. crispum, &c. (Gold Medal).

Messrs. B. S. Williams & Son, Upper Holloway, London, N., staged a mixed group, having Gloxinias, Roses, Stocks, herbaceous flowers, Carnations, Verbenas, &c. (Silver-gilt Medal).

Mr. John R. Box, West Wickham, staged a batch of herbaceous Calceolarias (Silver Medal).

Messrs. T. S. Ware, Ltd., Feltham, Middlesex, showed a very pretty group of hardy plants and flowers staged on the ground. The background was furnished with "pillar" Roses in pots and tall spikes of Eremurus. The front was arranged in the form of three "bays." An adjoining table was also furnished by Messrs. Ware with a collection of hardy flowers and tuberous-rooting Begonias (Gold Medal).

Each end of one of the principal tents was occupied with a group of Caladiums, staged respectively by Messrs. Peed, of West Norwood, and by Messrs. Laing, of Forest Hill. Messrs. Peed's group contained well-grown plants. Messrs. Peed also displayed a large collection of Gloxinias (Gold Medal).

Messrs. John Laing & Sons, Forest Hill, London, N., showed some excellent Caladiums. The foliage was not of large size, but the colours and shadings were nicely developed. The best varieties were Alcibiades, Triomphe de Comte, Madame Hubert Koechlin, Madame Groult (very handsome). The same firm also filled a long table in the conservatory with an excellent collection of tuberous-rooting Begonias. The variety Sir Howard Vincent is a remarkably handsome "scarlet;" White Lady is a commendable "white." Single varieties were freely represented (Gold Medal).

Messrs. W. & J. Brown, Stamford and Peterborough, exhibited a collection of greenhouse plants comprising Heliotropes, Pelargoniums (among which the "Cactus" type was prominent), Verbenas, Roses, Statices, &c. Statice Bonduelli (yellow) is a nice plant (Large Silver Medal).

Messrs. Hugh Low & Co., Bush Hill Park Nurseries, Enfield, showed a mixed collection of plants, having Carnations, Caladiums, Nicotiana Sanderæ, Epacris, Ferns, Metrosideros floribunda, &c. Of Carnations, Liberty, a large scarlet "tree," is a new variety. Some good Orchids were shown. Cypripedium grande was excellent; a large plant of Cymbidium Lowii was prominent (Gold Medal).

Messrs. Watkins & Simpson, Tavistock Street, Covent Garden, London, exhibited a miscellaneous collection of greenhouse plants (Silver-gilt Medal).

Mr. R. Rassmussen, Eastville Nurseries, Waltham Cross, exhibited Petunias and Sweet Peas (Silver Medal).

Messrs. Barr & Sons, King Street, Covent Garden, London, exhibited a large display of hardy flowers, including Lupines, Irises, Pæonies, Gladioli, Poppies, Pyrethrums, &c. On the opposite table Messrs. Barr displayed a large collection of dwarf trees in fancy china pots (Gold Medal).

Messrs. Wm. Cutbush & Son put up a very artistically-arranged group of Carnations relieved with small Palms and Maidenhair Ferns (Large Silver-gilt Medal).

Messrs. Geo. Boyes & Co., Aylestone Nurseries, Leicester, exhibited border, tree, and Malmaison Carnations (Silver Medal).

Messrs. Sander & Sons, St. Albans, exhibited their new hybrid Nicotianas, the colours of which are so greatly admired.

Messrs. Reamsbottom & Co., Alderborough Nurseries, Geashill, King's Co., Ireland, brought a collection of Anemones of the St. Brigid and other varieties (Silver Medal).

Messrs. John Waterer & Sons, Ltd., Bagshot, Surrey, are making their usual display of Rhododendrons. The flowers were in first-class condition, and were a feature of great attraction. The whole is displayed under one huge roof, and can be viewed without discomfort (Large Gold Medal).

The long corridor was entirely occupied with groups of ornamental foliage plants, relieved here and there with a number of flowering subjects, such as Rhododendrons, Roses, Clematis, &c. Mr. David Russell, Essex, staged two large banks of these plants, having Maples, ornamental Conifers, coloured Oaks, Elms, Beech, Vitis, &c. The design was in good taste, and finished with a pleasing edging of Euonymus latifolius and moss (Gold Medal).

Mr. L. R. Russell, Richmond, Surrey, showed ornamental trees and shrubs, staging the plants on both sides of the walk. Maples, Ivies, Elders, Oaks, Hollies, Aralias, Euonymus, and similar subjects comprised the collection; Olearia Hastii, Ceanothus, Clematis, &c., occupied the foreground (Large Silver-gilt Medal).

Mr. A. R. Upton, Guildford, Surrey, staged a collection of alpines and hardy plants (Silver-gilt Medal).

Messrs. Geo. Jackman & Son, Woking Nursery, Woking, Surrey, displayed some good hardy plants and cut flowers. We noticed Cistus formosus and Rubus xanthocarpus. Such subjects as Irises, Lupines, Oriental Poppies, Aquilegias, Pyrethums, &c., comprised the main features (Large Silver Medal).

Messrs. R. H. Bath, Ltd., Wisbech, showed a large batch of herbaceous flowers, Irises, Pyrethrums, Poppies, Liliums, Gladioli, &c. (Silver-gilt Medal).

Mr. Amos Perry, Winchmore Hill, London, N., exhibited a collection of hardy plants, Irises, Liliums, Papaver orientale, Incarvillea Delavayi, Ostrowskia magnifica, Saxifragas, Eremurus, &c. Phlox ovata was noticed flowering in a pan (Large Silver-gilt Medal).

Messrs. Wallace & Co., Kilnfield Nurseries, Colchester, showed many excellent hardy and border plants. Heucheras were a feature. Papaver bracteatum was represented in many choice varieties, among which was one with an immense flower of an unique colour, which can best be described as a very pale shade of salmon. To mention the many other beautiful things would require more space than is at our disposal, but we may include Plantago maxima, a new species, not unlike a small Eremurus himalaicus. Heuchera Kilnfield White has large racemes of creamy-white-coloured flowers. Iris pallida Junonia and I. p. dalmatica are two good Irises. Pentstemon glaber cyananthus is a new "break," the flowers of which approximate to a gentian-blue colour (Silver-gilt Medal).

Messrs. T. Rivers & Son, Sawbridgeworth, staged a collection of fruiting trees in pots. The plants were arranged in the beds of the great conservatory, and showed well amongst the background of tall Palms &c. Peaches, Nectarines, Plums, Grapes, and Cherries were included in the collection. Foster's Seedling and Gradiska Grapes were shown well trained on stands. A plant of Sturt Plum was loaded with fruit, while the fruits of Guigne Annonay Cherry were hanging in clusters. The newly-certificated Peach Peregrine was exhibited in a basket (Gold Medal).

Mr. S. Mortimer, Rowledge, Farnham, Surrey, showed Cucumbers, Melons, and Tomatos. The new Cucumber Delicacy was prominent (Silver-gilt Medal).

Mr. Geo. Hobday, Market Place, Romford, displayed Rhubarb from the open with petioles of immense proportions.

Colonial produce was shown by the Agent-General for Western Australia, who staged examples of cereals grown in that Colony, some very tempting-looking Apples, and views of fruit-farms, vineyards, cattle-ranches, &c. (Silver Medal).

The Royal Botanic Society showed a great number of economic plants, such as produce rubber, fibres, coffee, drugs, food products, &c.

THE AGRICULTURAL SEED TRADE ASSOCIATION.

May 29.—The twenty-fifth annual dinner of the above Association was held on the foregoing date at the Holborn Restaurant. Members from all parts were present, also several Colonial friends. The Chairman, W. Caldicott, Esq., J.P. (Worcester), in proposing the toast of the evening, "Success to the Agricultural Seed Trade Association," said:—The decline of agriculture is a very serious thing; there has been a decline of something like 2,000,000 Wheat acreage during the last ten or twelve years, which means a loss to the National Revenue and also the profit accruing from same. It has driven labour from villages to already over-crowded cities. Speaking more as regards the toast of the evening, he was reminded that this Association had just passed its twenty-fifth anniversary. If it did nothing else—there is the settling of disputes by arbitration by its members, sufficient in itself to commend it to all gentlemen who are not members. There is one thing it does, that is the settling of disputes at a minimum of cost and a maximum of good feeling. It is a costly thing to go to law over a small matter. It might cost more than the seed is worth. By being a member of this Association differences of opinion can be settled at a minimum of cost by experts and at the same time keep good friendship. There is one thing I should like to draw the attention of all gentlemen here—that is early buying. Some firms are only too anxious to rush in and buy to make a nominal profit of 3*s.* or 4*s.* irrespectively of the harm done to immature markets. I would suggest that they should hold off until stocks accumulate, then help themselves to get in at the bottom, not at the top.

SCHEDULES RECEIVED.

Hanley Horticultural Fete, to be held in the Hanley Park, on Wednesday and Thursday, July 5 and 6, 1905.

Nottinghamshire Horticultural and Botanical Society's Annual Exhibition, to be held in the grounds of the Arboretum, Nottingham, on Wednesday and Thursday, July 12 and 13, 1905.

Winchester Horticultural Society's Autumn Show, to be held in the Guildhall, Winchester, on Tuesday and Wednesday, November 14 and 15, 1905.

TRADE NOTE.

Mr. C. D. Wise has resigned the management of the Toddington Orchard Company, and his resignation will take effect from June 24 next. Mr. Wise will be succeeded by Mr. C. S. Martin, who for some years has held the post of assistant-manager.

MARKETS.

COVENT GARDEN, June 7.

[We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Wednesday, by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but often several times in one day. Ed.]

Vegetables: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Artichokes, Globe, per dozen ...	2 6- 3 6	Onions, Egyptian, per cwt. ...	6 0 —
Asparagus, bunch	0 6- 5 0	— Spring, dozen bunches ...	6 —
— Giant	6 0-10 0	Parsley, per doz. bunches... ...	1 0- 2 0
— English giant	5 0-10 0	Peas, Frame, per lb.	0 6-0 10
— ordinary, per bunch... ...	1 0- 2 6	— Flats	3 6- 4 0
Beans, dwarf, per lb.	0 9-0 10	— English, bns.	6 0- 8 0
— Channel Island	0 9-0 10	Potatos, per ton	60 0-70 0
— English, p. lb.	0 10-1 0	— Frame, lb.	0 2½-0 3
— Broad, p. pad	3 0- 4 0	— Teneriffe, cwt.	10 0-12 0
Beetroot, bushel	2 6- 3 0	— Jersey, p. cwt.	13 6-14 0
Cabbages, p. tally	2 6- 5 0	— St. Malo, per cwt.	11 6-12 0
Carrots, new ...	6 0 —	— Cherbourg, p. cwt.	9 0-11 0
— bag	6 0 —	Radishes, p. doz. bunches ...	1 0 —
Cauliflowers, per dozen	2 6- 3 0	Rhubarb, York, per dozen ...	1 6- 2 0
Cress, doz. pun.	1 0 —	— Natural, doz.	2 6- 3 0
Cucumbers, doz.	2 0- 2 6	Spinach, bush. ..	1 6- 2 0
Endive, per doz.	3 0 —	Tomatos, bundle	18 0-20 0
Greens, bushel ...	0 9- 1 0	— English, p. lb.	0 5- 0 6
Horseradish, per dozen bundles	8 0-10 0	— Jersey, p. lb.	0 5- 0 6
Mint, per dozen...	2 0- 3 0	— Valencia, per case	10 0-12 0
Leeks, per dozen bundles... ...	4 0- 6 0	Turnips, new, doz. bun.	4 0- 6 0
Lettuces, Cabbage, per dozen ...	0 9- 1 0	Vegetable Marrows	0 8-0 10
— English, Cos, per dozen ...	1 6- 1 6	Watercress, per doz. bunches.	0 5- 0 6
Mushrooms (house) per lb.... ...	0 8- 1 0		

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		*s. d. s. d.*
Aralia Sieboldi, p. dozen	4 0- 6 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
Araucaria excelsa, per dozen ...	18 0-30 0	— Hortensia, p. dozen	8 0-12 0
Aspidistras, green, per doz. ...	24 0-36 0	— paniculata ...	12 0-30 0
— variegated, per doz. ...	30 0-42 0	Kalosanthes, doz.	9 0-12 0
Azalea indica, doz.	18 0-30 0	Kentia Belmoreana, per doz...	12 0-18 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	— Fosteriana, p. doz.	12 0-21 0
— Sprengeri, doz.	6 0- 9 0	Lobelia, per. doz.	4 0- 5 0
— tenuissimus per doz. ...	8 0-10 0	Latania borbonica, per doz. ...	12 0-18 0
Bedding plants, store boxes, each	1 0- 1 6	Lilium Harrisi, per dozen ...	12 0-24 0
Begonias, tuberous, per doz.	6 0- 9 0	Marguerites, white, per dozen ...	6 0-10 0
Boronia elatior, per dozen ...	12 0-24 0	— yellow, dozen	12 0-18 0
Calceolarias, yellow, per dozen .	4 0- 6 0	Mignonette, doz.	4 0- 6 0
— herbaceous, per dozen ...	6 0- 8 0	Musk, Harrison's, per dozen ...	3 0- 4 0
Cannas, per doz.	5 0- 6 0	Pansies, per box...	1 0- 2 6
Chrysanthemum coronarium, double yellow, per dozen ...	8 0-10 0	Pelargoniums, per doz., Show .	9 0-12 0
Coleus, per dozen	2 6 4 0	— Ivy-leaved ...	6 0- 8 0
Crotons, per doz.	12 0-30 0	— zonal	4 0- 6 0
Cocos Weddelliana, per doz. ...	12 0-30 0	— scarlet do. ...	4 0- 5 0
Cyperus alternifolius, p. doz.	3 0- 5 0	Petunias, double, per dozen ...	5 0- 6 0
Dracænas, p. doz.	9 0-24 0	Rhodanthe, per dozen	4 0- 5 0
Ericas, per doz....	12 0-30 0	Rhododendrons, per dozen ...	24 0-30 0
Euonymus, dozen	4 0- 9 0	Roses, H.P.'s, per dozen	9 0-18 0
Ferns, in thumbs, per 100... ...	8 0-12 0	— Crimson Rambler (large), each	3 6- 7 6
— in 48's, p. doz.	4 0-10 0	Saxifraga pyramidalis, per doz.	12 0-15 0
Ferns, in 32's, doz.	12 0-24 0	Selaginella, doz.	3 0- 5 0
— hardy roots ...	1 0- 2 0	Spiræa japonica, per doz. ...	4 0- 9 0
Ficus elastica, p. doz.	9 0-12 0	Stocks, Intermediate, per doz.	4 0- 6 0
— repens, p. doz.	5 0- 8 0	Verbena, Miss Willmott, per dozen	9 0-12 0
Fuchsias, p. doz.	5 0- 8 0	— purple, p. doz.	8 0-12 0
Heliotropes, per dozen	4 0- 5 0	— scarlet, p. doz.	8 0-10 0

Fruit: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Apples, p. barrel	18 0-20 0	Grapes, Almeria, dozen lb. ...	8 0 —
— Victorian and Tasmanian, p. case	9 0-13 0	Lemons, per case	7 6-13 6
Apricots, French, per box ...	1 0- 1 6	Mangos, per doz.	4 0-18 0
— — per case ...	3 0- 3 9	Melons, each ...	1 3- 3 0
Banana, bunch ...	6 0-14 0	Nectarines, A., p. dozen	7 0-12 0
— loose, per doz.	1 0- 1 6	— B., per dozen	2 0- 5 0
Cherries, per half bush.	4 6- 8 0	Oranges, per case	15 0-50 0
— per box ...	1 0- 2 0	— Murcia, case	12 0-18 0
Figs, per dozen ...	3 0- 6 0	— Valencia, case	16 0-36 0
Gooseberries, per half bushel ...	4 0- 8 0	Peaches, doz., A.	10 0-18 0
Grapes, Alicante, per lb. ...	1 3- 1 9	— „ B.	3 0- 7 0
— Hambro, lb.	1 0- 2 0	Pines, each ...	2 6- 5 0
— Muscats, p. lb.	2 6- 4 0	Raspberries, per lb....	4 0- 5 0
— Australian, p. box	17 6-20 0	Strawberries, A., per lb.... ...	1 0- 3 0
		— — B., per lb...	0 6- 0 9
		— Southamptons, per handle ...	4 0- 6 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Anemones, per dozen bunches	2 0- 3 0	Mignonette, doz. bunches ...	3 0- 5 0
Azalea mollis, p. dozen bunches.	6 0- 9 0	Narcissus, per doz. bunches, Pheasant's Eye	1 0- 2 0
Bouvardia, per doz. bunches	6 0- 8 0	— double white.	2 6- 3 0
Calla æthiopica, p. doz. blooms	2 0- 3 0	Odontoglossum crispum, pr. dz. blooms	1 6- 2 0
— Elliottiana ...	12 0-18 0	Pæonies, dz. bchs.	2 0- 4 0
Carnations, p. dz. blooms, best American vars.	2 6- 5 0	Pelargoniums, p. doz. bnchs.	
— smaller do. ...	1 0- 2 0	— Show	4 0- 6 0
— Malmaisons ...	8 0-12 0	— Zonal, double scarlet ...	4 0- 8 0
Cattleya, per doz. blooms	10 0-12 0	— salmon & pink	4 0- 6 0
Dendrobium Wardianum	1 0- 2 0	Poppies, Iceland, doz. bunches	2 0- 4 0
Eucharis grandiflora, per dozen blooms	2 6- 3 0	— Oriental, doz. bunches ...	6 0- 9 0
Gardenias, per dz. blooms	0 9- 1 0	Pyrethrum, doz. bunches ...	2 0- 3 0
Gladiolus Colvillei, per dz. bunches	4 0- 6 0	Rhodanthe, doz. bunches ...	2 0- 3 0
Gypsophila, per dozen bunches	3 0- 5 0	Roses, 12 blooms, Niphetos ...	1 0- 3 0
Iris, Spanish, per doz. bunches	3 0- 6 0	— Bridesmaid...	2 0- 4 0
— best English grown, dozen	9 0-12 0	— Kaiserin A. Victoria ...	2 0- 4 0
Lilac, per bunch .	0 9- 1 6	— General Jacqueminot ...	0 6- 1 6
Lilium candidum	1 0- 1 6	— C. Mermet ...	2 0- 3 0
— lancifolium, rubrum and album... ...	2 0- 3 0	— Caroline Testout	2 0- 4 0
Lilium longiflorum ...	1 6- 2 6	— Liberty ...	2 0- 4 0
— tigrinum ...	1 6- 2 0	— Mad. Chatenay	4 0- 6 0
Lily of the Valley, dozen bun. ...	6 0-12 0	— Mrs. J. Laing.	2 0- 4 0
Marguerites, white, doz. bunches	3 0- 4 0	— Sunrise ...	1 0- 2 0
— yellow, dz. bun.	2 0- 3 0	Stephanotis, doz. trusses ...	1 6- 2 6
		Sweet Peas, doz. bunches ...	3 0- 6 0
		Tuberoses, per dozen blooms	0 3- 0 6

Foliage: Average Wholesale Prices.

	s.d. s.d.		*s.d. s.d.*
Asparagus plumosus, long trails, each ...	0 6- 0 9	Grasses, hardy, p. dozen bunches	2 0- 4 0
— — medium, each ...	0 4- 0 6	Ivy-leaves, bronze	1 6- 2 0
— — short sprays per bunch...	1 0- 2 6	— long trails, per bundle ...	1 0- 2 0
— Sprengeri ...	0 9- 1 6	— short green, doz. bunches	1 0- 1 6
— tenuissimus..	9 0-12 0	Moss, per gross...	5 0- 6 0
Adiantum cuneatum, per dozen bunches... ...	4 0- 6 0	Myrtle, per dozen bunches... ...	3 0- 4 0
Cycas leaves, each	1 6- 2 0	Smilax, p. dozen trails	4 0- 6 0
Fern, English, p. dozen bunches	3 0- 4 0	Hardy foliage (various), per dozen bunches	3 0- 4 0

Remarks.—Indoor Strawberries are still arriving. Next week there will be plenty from Southampton. This week the trade has not been so good for them as was expected. The wet weather and the coming holidays account for this. Good consignments of Cherries from France are still arriving; also a few Strawberries in baskets. There are plenty of English Figs on the market, mostly from Worthing, and the prices are good, considering the quantities available. Pines are a little cheaper, owing to the slow trade.

Potatos.

Dunbars, 80*s.* to 90*s.*; various, home-grown, 60*s.* to 70*s.* per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

Pot Plants.

There has been a very good trade done in pot plants during the past week, though owing to the rain some plants did not clear quite so well on Tuesday or Wednesday mornings. Good flowering plants for use in decorations are in demand, and there is a large trade being done in bedding plants. The supplies continue to be abundant. Ivy-leaved Pelargoniums were never seen in better condition. Souvenir de Chas. Turner, Madame Crousse, and Galilee are the varieties most extensively grown, the last-named being the most effective. Show Pelargoniums are now very good, and zonal Pelargoniums are remarkably well flowered plants, the most showy variety of all being that of Raspail, which might be described as a blaze of colour. Fuchsias are abundant; it is remarkable that it is chiefly the older sorts that are grown. Royal Purple is one of the best dark varieties seen, and Avalanche still remains a favourite. Ballet Girl is the best double white-corolla'd variety. Lady Heytesbury remains as one of the best. Spiræas (Astilbes) are plentiful. Some fine plants of the variety S. astilboides floribunda are seen. Of Hydrangeas those of H. Hortensia having blue flowers make the highest prices. The hot weather has not been good for Verbenas, and these are hardly equal to the plants sold a little earlier in the season. Mignonette is very good. Rhodanthe continues to be plentiful, but the quality is not consistently good. The yellow-flowered Marguerite Etoile d'Or is much better this season than usual. There are some good dwarf plants of Lilium Harrisi, but the cut flowers of L. longiflorum being plentiful the plants do not sell well. Verbena "King of Scarlets" is now very fine, and there are also some good specimens of a purple variety. There are still some fine plants of Erica ventricosa magnifica and E. v. rosea; E. Cavendishii is still procurable. Boronia heterophylla is good. Ferns, Palms, and other ornamental foliage plants vary but little in price. They are not quite so prominent now that so much space is required for flowering plants.

Cut Flowers.

The demand for cut flowers is fairly good, and for choice material prices are inclined to advance. Much of the surplus, however, which is usually cleared out by hawkers, has been left over, because several days were wet, and this morning at closing-time much remained unsold. Good Roses and Carnations have sold much better they they did recently. Iceland Poppies are more than plentiful. Liliums are advancing in price. Lilium speciosum superbum is very fine, but there are no good flowers of L. auratum at the moment. Imported flowers are practically finished for the season. *A. H., Wednesday, June 7.*

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending June 3, 1905.

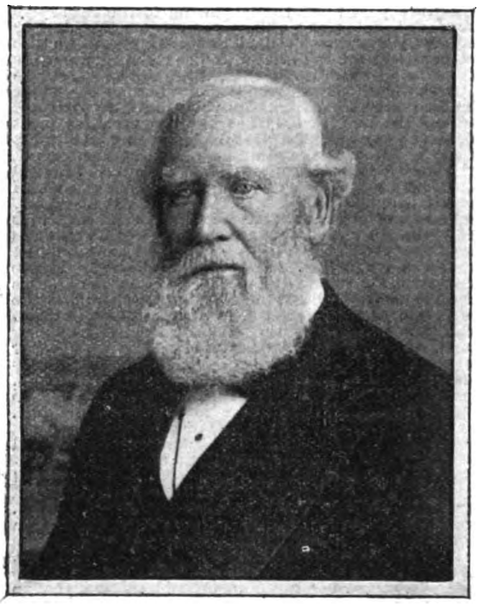
1905.	Temperature of the Air.				Lowest Temperature on Grass.	Temperature of the Soil at 9 A.M.			Rainfall.	Sunshine.	
May 28 to June 3.	At 9 A.M.		Day.	Night.							
	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
Means	64	57	73	50	45	59	57	53	Tot 0·18	7	29

(*For continuation of weather see p. x.*)

Obituary.

D. S. Thomson.—We have to record the death, on Tuesday morning last, of Mr. David Stewart Thomson, head of the firm of Messrs. D. S. Thomson & Sons, Wimbledon, Surrey, nurserymen, seedsmen, and florists. Deceased, who was in his ninetieth year, was probably the oldest member of the trade, and throughout his career Mr. Thomson won the esteem of the members of the trade and of gardeners generally. He was upright in all his dealings, commercial and otherwise. Mr. Thomson was born in the vicinity of Stirling, N.B., but more than half a century ago he purchased the famous fruit gardens, as they were then, at Wimbledon from the family of James Paxton (brother of Sir Joseph Paxton), who possessed them previously.

Mr. Thomson soon commenced to establish the present nurseries, and made landscape gardening a special feature of his business. Later Mr. Thomson secured the freehold of nearly 50 acres of good land between Wimbledon and Raynes Park, which he abundantly stocked with trees and shrubs, and other species of hardy plants. A description of this nursery will be found on reference to our issue for November 8, 1902.



The late D. S. Thomson, Wimbledon, aged 90.

Deceased leaves two sons, William Stewart Thomson and Henry David Thomson, who have both taken active parts in the management of the business for some years past.

ANSWERS TO CORRESPONDENTS.

Bamboos: *A. B.* and *Lord Mt. E.* It is the habit of most of the species to die after the plants have flowered. From the description furnished of your plants it appears unlikely that those which have flowered will again become ornamental, and the best thing to do will be to clear them away.

Caterpillars on Ivy: *J. H. Edwards.* Caterpillars or larvæ of a species of Tortrix Moth, closely allied to the Rose tortrix. Spray the Ivy with Paris-green, at the rate of 1½ oz. to 20 gallons of water. Get it in the paste form, and use with great care, as it is poisonous. Keep the water agitated during the process of spraying, as the substance is a heavy mineral and has a constant tendency to settle to the bottom of the vessel. Spray at once, as the caterpillars are nearly full fed, and if necessary repeat the spraying after a week has elapsed. You could also considerably reduce the pest by sweeping the Ivy with a fly-net when the moths appear.

Correction. In the report of the Temple Show, on p. 346, col. 1, our reporter inadvertently referred to an exhibit of Tree Carnations shown by Messrs. R. H. Bath, Ltd., Wisbech, as having come from Mr. M. Prichard.

Dichroic Thorn: *Sir R. P.* The occurrence of trusses of red and white flowers on the same branch is interesting, but not unique.

Gloxinia: *Warwick.* The Gloxinia is good, but not remarkable. The climber is Mandevilla suaveolens. The other plant we do not recognise. Send when in flower.

London Clay and Vegetable Culture: *H.J.S.* London clay, being of a sticky, retentive, and cold nature, requires to be broken up to a depth of 3 feet at least. This is best accomplished by what is generally termed trenching, which means opening a trench 3 feet in width and the same in depth, and wheeling the excavated soil to the other end of the ground, or where the work is to finish. The next piece to the same width is then marked off, and the soil from this area put into trench No. 1. Before this is done, however, the trench should be well lined with London stable-manure, and the soil, whilst being put into the trenches, should be mixed well with road-scrapings, sand, ashes, lime-rubble, and the shortest of the droppings from the manure. If the subsoil is very poor, it should be allowed to remain at the bottom of the trench, but even then it needs to be intermixed with the ingredients named above. Clay so treated will become much more fertile than formerly. Frequent digging is one of the most important and necessary operations for bringing such soil into a fertile condition, the consequent exposure to the weather allowing a freer access to air, heat, and sun. By thoroughly trenching the soil 3 feet deep good drainage is generally secured.

Mushrooms: *C. A. B.* We cannot determine from the specimens you send the reason of their failure. We should advise you to make a fresh start. Clear out the old material, thoroughly cleanse the structure, and syringe the woodwork and other surfaces with a rose-red solution of permanganate of potash, after which proceed to make the new beds.

Names of Plants: *A. C.* Collomia coccinea.—*T. S.* Pyrus torminalis, Wild Service tree, the berries of which are bletted like Medlars.—*H. R., Norfolk.* Maxillaria tenuifolia.—*T. W., Glamis.* 1, Allium moly; 2, Ornithogalum arabicum.—*A Reader.* We are unable to name such an incomplete specimen. Send when in flower. — *Japonica, Durham.* 1, Dendrobium Parishii; 2, D. crystallinum.—*A. M. K.* Cœlogyne nitida.—*Felix.* 1, Bulbophyllum Careyanum; 2, Maxillaria lepidota; 3, Oncidium barbatum.—*R. A.* 1, Adiantum caudatum; 2, A. concinnum; 3, Asplenium bulbiferum; 4, Cheilanthes elegans; 5, Pteris tremula; 6, Selaginella Wildenovii. — *Woking.* Styrax officinalis. — *Mrs. S.* Styrax officinalis.—*W. P., Stroud.* Cynoglossum officinale, belonging to the Boraginaceæ.—*F. G. G.* Scilla peruviana.—*F. S.* Syringa Emodi.—*W. S. S.* 1, Carex acuta probably; 2, Parietaria officinalis.—*F. L.* 1, Alchemilla vulgaris; 2, Cornus sanguinea; 3, Citrus triptera; 4, Griselinia littoralis; 5, Polygala vulgaris; 6, Cytisus sp. or hybrid.

Peach: *Dr. G. G.* The fruit has fallen prematurely because there has been imperfect stone formation. We are unable to say definitely what may have caused this, but in the cultivation of stone fruits it is necessary to assure oneself that a certain amount of lime is present in the soil.

Peach Leaves: *T. G.* The injury to the leaves has been caused by scorching or scalding. Employ more ventilation and examine the glass in the roof of the house to see if there are any faults that have the effect of focusing the rays of the sun. There is no fungus disease present, and we do not think the water is to be blamed.

Pelargonium: *R. W. R., Usk.* The Pelargonium cuttings were too long and old. They were planted too deeply and possibly over watered. As to the Narcissi it will be better not to force them a second year, but to grow them on in the open and let the bulbs well ripen.

Penny Seed Packets: *The Cape.* We cannot enumerate special firms. Scan our advertising columns.

Potato: *J. T. S.* We will report on your specimens in another issue. The granules you see are enlarged cells, not starch grains, though they may contain some.

Shapes for Use in the Topiary Garden: *A. C.* You will be able to obtain these on application to some of the garden sundriesmen. See our advertising columns.

Thinning Apples: *Southern Grower.* No hard-and-fast rule can be laid down with respect to the thinning of Apples or other fruits. Characteristics of particular varieties have to be considered, also the conditions of culture, and the nature of the soil in which the trees are growing. Much also depends on the number of fruits which set and their distribution throughout the tree. If Peaches are recommended to be thinned until there is only one to the square foot or half foot, and through bad setting parts of the tree are devoid of fruit at all, the cultivator, being unable to re-arrange his fruits, would permit some of them to remain closer to each other than would otherwise be done, because the total amount of fruit left to be perfected would not be more than the tree is capable of ripening. So with Apples if a tree has set only a poor crop, then in instances where several fruits have set in a particular truss it may be advisable to leave such unthinned. Apple-trees worked on the Crab stock and growing vigorously may be more heavily and more continuously cropped without impairing the constitution of the tree than can a tree worked on the Paradise stock. Trees that are thoroughly well nourished would naturally perfect a heavier crop than others that are merely pruned annually and the ground about them kept clean. For every Apple left upon a single truss of a large fruiting variety, such as Peasgood's Nonesuch, two or even three fruits may be left of smaller fruiting varieties, such as Beauty of Bath, Worcester Pearmain, and Cox's Orange Pippin. The general effect of well-considered thinning is not only to increase the size of the fruits, but it also has a great influence on the production of good colour and quality. It tends also to promote regular bearing. Fruits which have been properly thinned have the highest market value, being much more profitable than a larger quantity of inferior produce would be. Our Calendar writers endeavour to be as explicit as possible, but, as we have shown, they cannot advise you as to the exact number of fruits that should be left on a particular tree, unless they saw that tree. After stating the reasons for thinning, and the principles that underlie the carrying out of the work, the teacher must leave the rest to the judgment of the operator.

Tomatos: *F. C. B.* You have probably afforded too much food, and an excess of water and heat, for the plant to perfect its flowers, which have been cast off before fertilisation.

Wallflowers: *B. and B.* The specimens you send have been planted too deeply. The earth has covered about 6 inches of the main stem and branches. When so planted there is nothing for the plant to do but for the outer covering of the stems to assume the nature of the covering of the root and send out roots nearer the surface. Failing that the bark dries, and the plant also. Some plants are capable of adapting themselves to these unnatural circumstances better than others, but deep planting is bad as a rule.

Communications Received.—E. G. (thanks for contribution to Gardeners' Orphan Fund)—Dr. Dammer, Berlin—The Earl of Mt E.—G. B.—C. Bros.—J. R.—W. R.—A. T. S.—G. P.—F. J —First Garden City, Ltd.—F. G. V. & Co.—Secretary, York Gala—S. A.—Chloris—C. T. D.—C. P.—Sir M. Foster—R. P.—W. A. C.—E. M.—H. W. W.—W. Hackett—Cactus—F. G. G. (next week)—South Shields Horticultural Society—A. B. W.—W. H. S.

THE
Gardeners' Chronicle

No. 964.—SATURDAY, June 17, 1905.

CONTENTS.

Ants as gardeners ... 379
Awards of the R.H.S. 381
Azalea cultivation in Dresden 379
Books, notices of—
  Alpenflora 379
  Another Hardy Garden Book 380
  Garden Colour ... 374
  My New Zealand Garden 380
  Trees and Shrubs ... 379
Books received ... 379
Buds, inserted, remaining dormant ... 385
Calandrinias 386
Campanula persicifolia 372
Catalpa, a hybrid ... 381
Cherries, flowering ... 381
China, plant-collecting in 382
Colonial notes 371
Curculio, the Apple ... 372
Cymbidium rhodocheilum 378
Eremurus 384
Fern-pest, a curious... 375
Foreign correspondence 372
Forestry 370, 386
Fruits, small, in foreign catalogues... 374
Fungus diseases ... 380
Garden city, a 379
Gardeners' Association, the British ... 378
Kew Guild, the ... 385
Kew notes 374
Law note... 381
Meconopsis, Indian ... 369
Melampyrum, the biology of 379
Mildew on Cucumbers 386
Obituary—
  Colonel Webb ... 386
Orchid notes and gleanings 381
Oversea supplies ... 380
Plant diseases, investigation of 381
Plant notes 375
Plants, new or noteworthy... ... 370, 378
Rhododendrons ... 370
Rosary, the 381
Rubber 374
Societies 386
Species, vanishing ... 385
Trees, danger from falling 381
Tulipa suaveolens and T. præstans 383
Vancouver, alexandra 378
Week's work, the ... 376

ILLUSTRATIONS.

Cymbidium rhodocheilum (Supplementary Illustration)
Meconopsis grandis 369
Odontoglossum crispum "Raymond Crawshay" ... 375
Portrait of Mr. J. Medley Wood 381
Primula sinensis growing in its natural habitat in China 382, 383
Rhododendrons Lady Godiva and Sappho ... 370, 371
Sarracenias as exhibited at the Temple Show ... 373

THE SPECIES OF MECONOPSIS.

[*We are pleased, in view of the great interest now attaching to the genus in horticultural circles, to lay before our readers a brief account of the Asiatic species of Meconopsis from the pen of the recognized authority on the subject, Lieut.-Col. D. Prain, Indian Medical Service, Director of the Royal Botanic Garden, Calcutta.* ED.]

THE interest that has lately been taken in the genus Meconopsis, owing to the successful introduction and exhibition of some Chinese species quite worthy of the attention they have received, will remind gardeners that there are a number of Indian species of this genus. Some of these are quite well known in cultivation, others have been introduced to European gardens from time to time, but have failed to persist. Still others have not yet been added to our European garden lists.

These "Poppies" arrange themselves in a few natural groups, which are easily distinguished. There is first of all the group "Aculeatæ," which takes its name from M. aculeata, of the North-western Himalaya, a species quite familiar to English gardeners. Another member of this group is M. horridula, known also in one of its forms as M. racemosa; this is really a Tibetan species, which only overflows into the higher Himalayan valleys along the southern border of Tibet. Though it has been over and over again introduced to European gardens, little success seems to have attended its cultivation. This is not surprising, considering the natural conditions of its existence, and it may be doubted whether any, save those who are in charge of the really alpine gardens in Central Europe, can hope to raise the species successfully. The last member of the group, M. sinuata, which is the representative in the eastern Himalaya of M. aculeata, has not yet been raised in Europe.

More familiar than the "Aculeatæ" group is the group "Robustæ," which takes its name from M. robusta, a yellow-flowered species from Kumaon. This has been frequently introduced to European gardens, and possibly now exists in more than one collection, though if so it would appear to be somewhat readily mistaken for M. paniculata, another yellow-flowered species which extends from Central Nepal to Bootan. Both species, as references to the literature of the subject will show, have been mistaken for M. nepalensis, a red-flowered species which considerably resembles M. paniculata in externals. This species was apparently known in English gardens before 1830, but had so completely disappeared from cultivation till it was re-introduced by Sir George King, and flowered by the late Mr. Wilson at Weybridge, about twenty years ago, that when it was successfully raised anew it was not recognised, but was taken for a red-flowered form of M. Wallichii. This last species is possibly the most familiar member of the Robustæ group; owing to the pale, somewhat washed-out purple colour of its petals it is perhaps the least beautiful. But if one may judge from the material available, the finest member of the Robustæ group is M. superba, a white-flowered species from Bootan, which it has not yet been possible to introduce to European gardens.

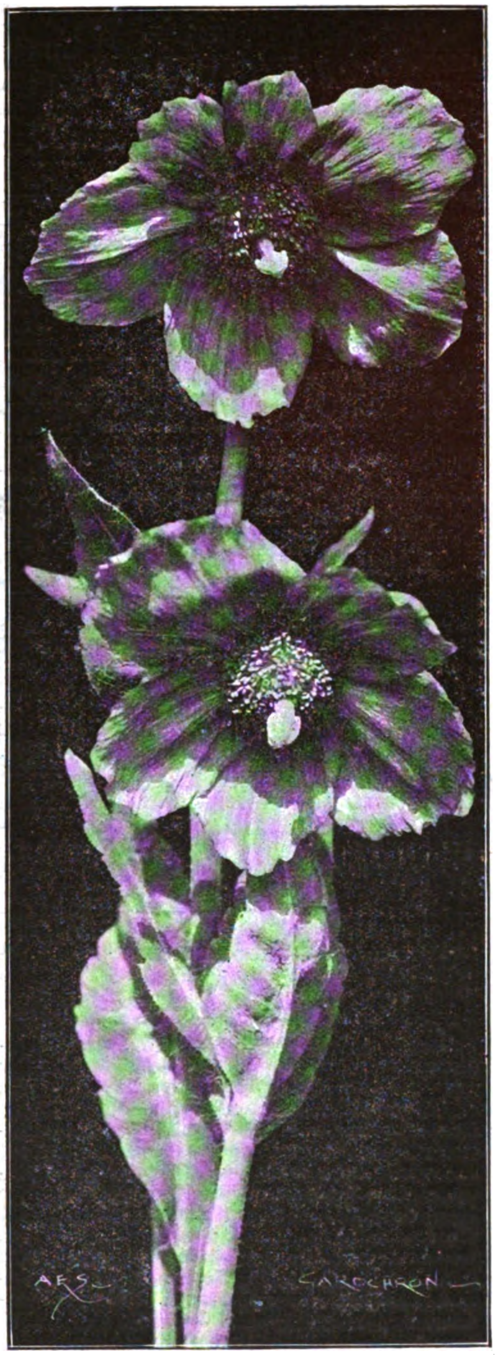


FIG 157.—MECONOPSIS GRANDIS AS FLOWERING IN THE EDINBURGH BOTANIC GARDEN. (*Reduced one-half.*)
Colour of flowers dark blue, with markings and suffusion of purple. Size of flowers, 5 inches in diameter.

The "Primulinæ" group takes its name from M. primulina, a species from Bootan and Chumbi, with nodding, blue flowers. This species, which has not yet been introduced to European horticulture, is the only Indian member of its group. In China the group is represented by M. Henrici (sometimes also known as M. principis), which has apparently been introduced to European gardens; and by M. Delavayi, which, like M. primulina, does not seem to be yet known in cultivation.

The group in which most interest is being taken at present is the group "Grandes," which takes its name from M. grandis. There are two distinct sub-groups within the Grandes—viz., one composed of species with one-flowered, leafless scapes, the other including species whose several-flowered scapes bear leafy bracts. Of the former sub-group India claims but one species, M. simplicifolia, which has long been familiar to European gardeners. It is a native of the Eastern Himalaya, but extends thence into Southern Tibet. The other species of the sub-group are East Tibetan or West Chinese, and of these the most striking is M. punicea, which lovers of Poppies had an opportunity of seeing at the recent Temple Show (see *Gardeners' Chronicle*, Oct. 22, 1904, fig. 130). The sub-group, with leafy bracts on the several-flowered scapes, includes two species only; one of these is M. integrifolia, the yellow-flowered species, whose recent introduction has been so warmly and so deservedly welcomed (see Supplementary Illustration to the *Gardeners' Chronicle*, October 1, 1904); the other is M. grandis, from which the group takes its name. This has been in cultivation now in England for a number of years, but as it apparently has the bad taste not to care for the atmosphere of London, it has not provoked so much remark as M. integrifolia [see fig. 157. Mr. Harrow, to whom we are indebted for the photograph, tells us that a plentiful supply of seedlings has been raised in the Edinburgh Botanic Garden. ED.] M. grandis is to be met with in Western Sikkim, towards the head waters of the Rangiet river, not far from the Nepalese frontier. It appears, however, only to occur in the vicinity of the huts occupied in summer by graziers, who say that it is not really a native of Sikkim, but that it was brought thither from Nepal. There would appear to be two forms of the species, because some of the specimens are stated by native collectors to have had red or purple flowers; others are said to have had the flowers blue.

The first European to note the colour of the flowers was Professor Gammie, of Poona. As he found them to be very deep blue, and as native observers are often quite unintentionally misleading recorders of colour, "very deep blue" is given in the original account of M. grandis as its colour. It has, however, turned out, as is often the case, that both observations were correct, although the majority of those who have flowered M. grandis have found the flowers to be blue. The late Mr. Thompson, who was the first to flower the species in Europe, happened to succeed with a plant whose flowers were described by him as "vinous-purple," and not blue.

The last group of Indian species is the group "Bellæ," which is represented by a single species, M. bella, the most beautiful member of this interesting genus. It is a native of Eastern Nepal, and has not yet flowered in Europe so far as is known. [In the Edinburgh Botanic Garden are several seedlings derived from seed obtained in the Calcutta Botanic Garden, some of which it is hoped will flower this year. ED.] It differs from the other species in having finely-divided foliage like that of a Corydalis, and in affecting the faces of steep cliffs, into the crevices of which its thick root-stocks penetrate horizontally. *D. P.*

NEW OR NOTEWORTHY PLANTS.

KALANCHOE MAGNIDENS, N. E. BROWN (*n. sp.*).*

THE genus Kalanchoe appears to be well represented in Africa, whence of recent years many very fine species have been introduced, but the present novelty cannot be said to possess much beauty, as its flowers, although numerous, are small and not showy, of a light salmon colour; it was sent to Kew in 1904 from Uganda by Mr. T. Dawe.

KALANCHOE ANGOLENSIS, *N. E. Brown* (*n. sp.*).†

This is rather a pretty species with broad-petalled, bright yellow flowers, differing from those of all other species known to me in the great variability of the number of the corolla-lobes, which vary from four to seven in different flowers open at the same time on the same inflorescence. As this tendency to vary by increasing the number of parts of the corolla (four being the normal number of lobes throughout the genus) is a perfectly natural one, it points to the possibility of a double-flowered form being obtained from it by careful selection; and if this could be effected, a new race of decorative plants would be the result. The flowers, however, do not remain open more than two or three days, but being numerous make a very fair display, and are about two-thirds of an inch in diameter. This species was discovered in Angola by Mr. John Gossweiler, the Curator of the Botanic Garden at Loanda, who sent seeds of it to Kew in 1903, from which the plants that flowered in February of this year were raised. *N. E. Brown.*

FORESTRY.

THE LOCUST TREE.

I THINK we are not so far behind about the Locust tree as Mr. Booth (see p. 246) and some others would have us believe. If they had a thousand acres of it ready for disposal, what would they do with it? At what size, for what purposes, and at what price, could they dispose of it? I venture to say that it would prove a drug on their hands. It makes good posts, and for such purposes it might be grown as tall coppice, but as a timber tree it has neither height, bulk, nor good colour, and is often broken by gales. The Locust tree has been known long enough and well enough in this country and on the Continent to prove its value, yet it scarcely enters the lists.

If I wanted a marketable substitute for the Locust tree, its equal or superior in every respect, I would choose the common Laburnum, which produces such beautiful wood—hard, heavy (over 50 lb. to the cubic foot when dry), and almost indestructible, taking a polish like glass (both heart-wood and sap-wood, the former a deep rich brown and the latter bright yellow, both clearly defined at their edges). A beautiful slab of this wood was exhibited in the Forestry section at the Park Royal show last June. It is much used for making small articles, and is, I believe, nearly all imported from abroad. It is often seen on shop counters as a string-box, where it stands tugging at, being heavy.

We have plenty of good trees of known quality for cropping purposes, but to get heavy and saleable crops is the problem. To put a new tree on the home market is not easy, and that is the main obstacle to selling the Douglas Fir at present. To timber merchants who are neither botanists nor foresters, it is simply a Spruce worth 2*d.* or 3*d.* a foot standing in the wood, and it is only by judicious trimming and lotting to show its colour and quality that as yet the price of Larch can be got for it, but by the time it is plentiful it will be better known.

The time a tree takes to grow, its uses and the extent of the demand for its timber, are the factors that constitute its value to the planter. I

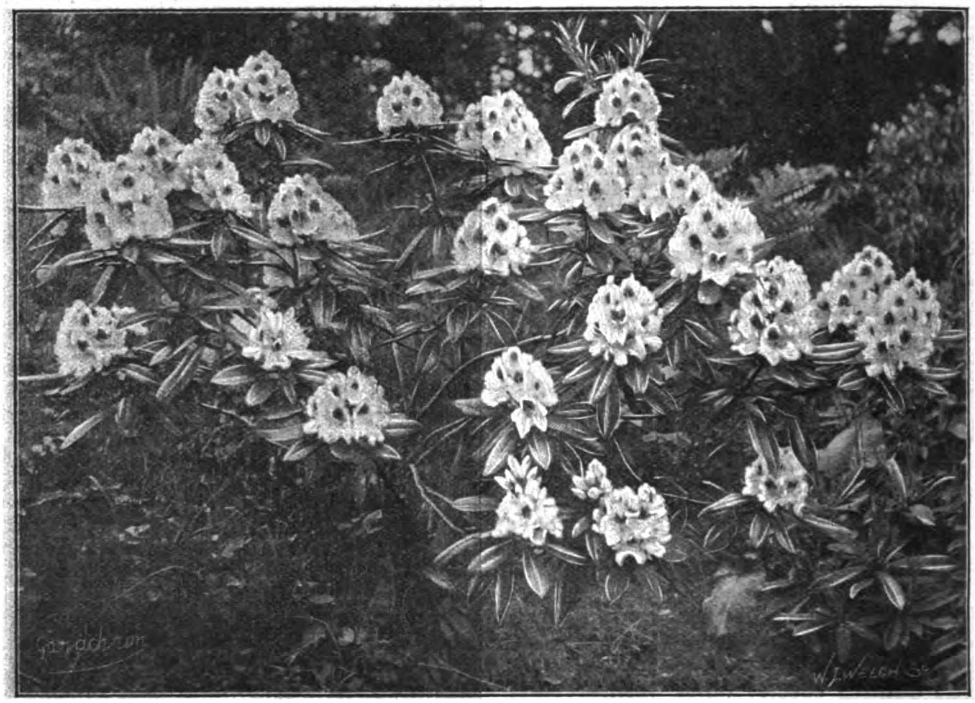


FIG. 158.—RHODODENDRON "SAPPHO": FLOWERS WHITE WITH MAROON BLOTCH.

RHODODENDRONS.

As supplementary to the illustrations of Rhododendrons published in our last issue, we now reproduce two photographs, figs. 158 and 159, which show the varieties Sappho and Lady Godiva flowering well in a garden in the North-east of Ireland. Though these varieties are not so expensive or choice as Pink Pearl or Doncaster, they are nevertheless valuable. Sappho is one of the best known and most effective in the section having spotted or blotched flowers. In a garden or in an exhibition such as that held at Paris quite recently, Sappho, by its distinctness and effectiveness, stands out very prominently; and if Messrs. Jno. Waterer & Sons have this variety in their collection now on view at the Royal Botanic Society's Gardens, Regent's Park, visitors will be sure to see and admire it. The flowers are white, and the blotching is of deep maroon colour. Lady Godiva, shown at fig. 159 is also a good variety, the flowers being white blotched with yellow.

BOOKS RECEIVED.—The following books are upon our table, and we hope to make further notice of them as our space permits:—*How to Make and Manage a Garden*, by William F. Rowles; *Greenhouses: How to Make and Manage Them*, by W. F. Rowles. Both books published by C. Arthur Pearson, Ltd., Henrietta Street, W.C.—*Homeland Handbook to Lynton, Lynmouth, and the Lorna Doone Country*, Mr. J. E. Morris. Homeland Association, Bride Lane, Fleet Street, E.C.—*Sitzungs-Berichte und Abhandlungen*, "Flora" zu Dresden. 1903-4, Franz Ledien. H. Burdach, Königl. Sächs. Hofbuchhandlung, Dresden.—*Economie Forestière*, Tome 2me, G. Huffel. Paris: Lucien Laveur, 13, Rue des Saints-Pères.

---

* *Kalanchoe magnidens*, *N. E. Brown* (*n. sp.*).—Plant 2½ feet or more high, quite glabrous in all parts; the stem, leaves and calyx are green, with a scarcely perceptible glaucous bloom. Leaves with a petiole ¾—1 inch long, and a blade 2—3½ inches long, ¾—2½ inches broad, the lower elliptic-ovate; the uppermost oblong or lanceolate-oblong, all obtuse, broadly cuneate at the base, with usually three (rarely four) large, obtuse distant teeth on each side. Inflorescence laxly branched, the ultimate cymes compact, ¾—1¼ inch in diameter, nine to twenty-five flowered. Pedicels 1—3½ lines long. Sepals ¼ inch long, nearly 1 line broad, lanceolate, acute. Corolla four-lobed, light salmon coloured; tube 5—5½ lines long; lobes ¼ inch long, nearly 1 line broad, lanceolate, very acute, recurved-spreading. Stamens included, inserted in the throat of the corolla-tube; anthers blackish. Hypogynous glands ¾—1 line long, subulate, yellowish. Carpels included, gradually tapering into the styles, green.

† *Kalanchoe angolensis*, *N. E. Brown* (*n. sp.*).—Stem about 3 feet high, ½ inch or more thick at the base, clothed with a spreading pubescence. Leaves opposite, fleshy, brittle, the lower about 4 inches long and 2 inches broad, the upper gradually smaller, oblong, elliptic-oblong or lanceolate-oblong, obtuse or subacute, recurved and concave beneath at the apical part except the three to four upper pairs, channelled along the middle of the rest of the leaf on the upper side; midrib prominent and rounded beneath, somewhat thinly covered on both sides with a very short, spreading, and rather indistinct pubescence, dark green, shining. Cyme terminal, compound, 3—4 inches or more in diameter, flat topped, with the main branches 1—1½ inch long, pubescent, green. Bracts 1—2 lines long, subulate, pubescent. Pedicels ½—1½ line long, pubescent, green. Calyx divided to the base into 4—5 lanceolate, acuminate lobes, ½-inch long, about ¾ line broad, pubescent, light green. Corolla-tube ½ inch long, obtusely 4—7 angled at the enlarged base, light green, pubescent; limb ¾ inch in diameter, with 4—7 widely-spreading lobes 3—3½ lines long, 1½—2 lines broad, oblong, very obtuse, with a terminal awn ½ line long, rich bright yellow, slightly darker at the centre, pubescent on the back. Stamens in two rows, included, glabrous: filaments ½ line long. Hypogynous glands 2 lines long, filiform, acute, yellowish-green, glabrous. Carpels included, lanceolate, tapering into slender styles ¾—1 lin. long, green.

should be sorry to advise anyone to plant either, Locust or Walnut extensively, while they had other well-known and better croppers at their disposal. It is rather curious that advocates of the Locust-tree do not plant it more extensively themselves, seeing how long and favourable their opportunities have been.

I may be wrong, but the longer I live the more I discount the opinions as to the value of timber trees of those foresters and owners who are not also acquainted with the timber trade and its demands.

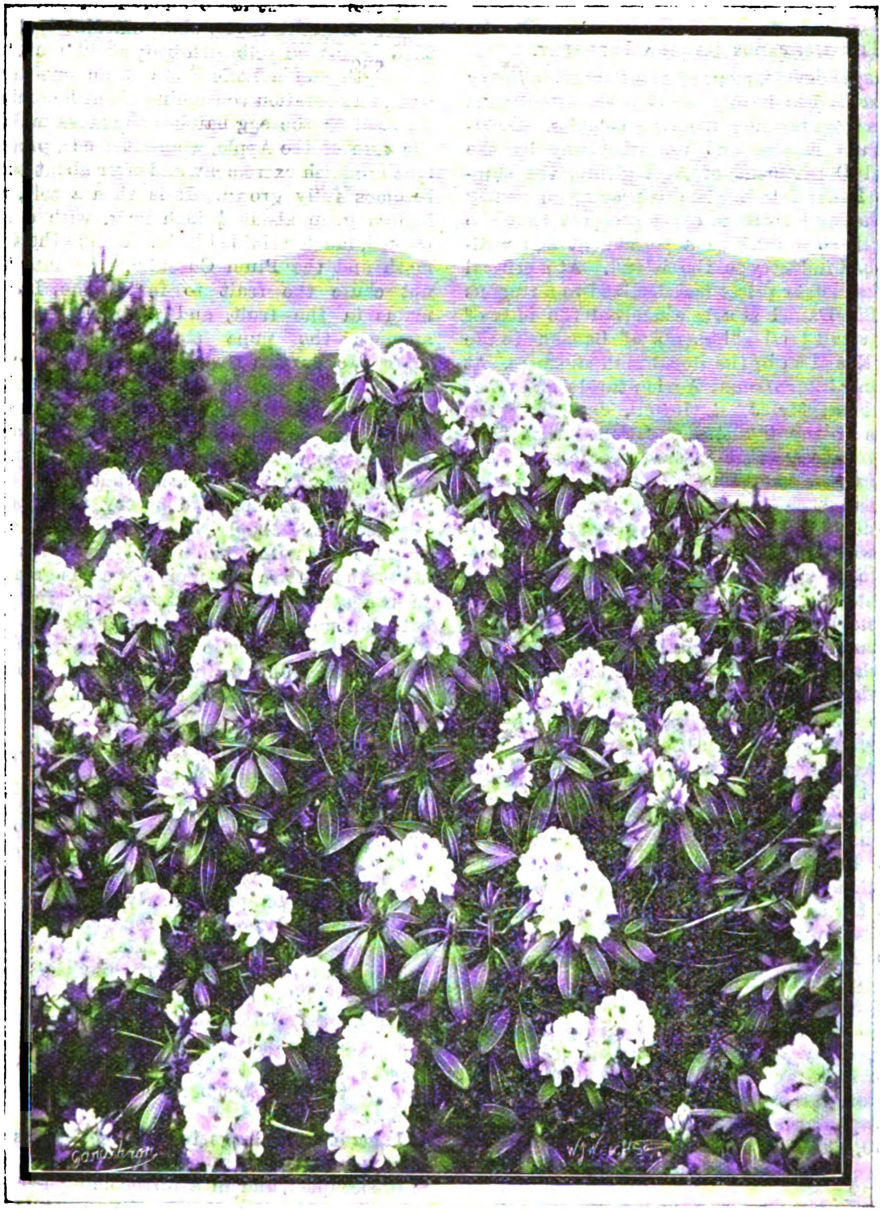


FIG. 159.—RHODODENDRON "LADY GODIVA": FLOWERS WHITE WITH YELLOW BLOTCH.

Outside the "trade" the ignorance on this head is profound. Locally and generally everything depends ultimately on the demand and the variety of uses to which any timber can be put. Fancy-woods under planking dimensions usually go as oddments at timber sales and fetch a low price.

Reverting to Cobbett, can those of your readers who profess to know most about the Locust-tree tell us what became of Cobbett's plantations? He raised and distributed great quantities of the tree; stated that in sixty years it would be as common as the Oak in England, and extolled it so much that it was planted to an unprecedented extent. It cannot be said, therefore, that the tree was not tried. What has become of the plantations? Planters stuck to the Larch after trial, but neither the precept nor the practice of Cobbett appears to have established a belief in the Locust-tree. I may say here that I am looking at this subject from an economic forestry point of view, as I understand your correspondents are doing, and I ask, Will it pay to plant the Locust-tree?

There is one tree that I have an increasingly favourable opinion of, and that is the Deodar Cedar. Dr. Masters says its resemblance to the Larch is striking botanically, and the same may be said of the timber, only it is closer in the grain, heavier, and of a deeper colour. It is one of the finest of Conifer timbers, I should say, and I have seen it growing of such good dimensions, and in so many parts of Britain on dry upland situations, as to think that it might be made one, at least, of the substitutes for the Larch. I do not go by heavily branched garden specimens, but by what I have seen of it in plantations, where it is always clean and timber-like, and not much behind the Larch in height. There are many trees of this description in the woods at Newstead Abbey, near Nottingham, belonging to Lady Chermside. *J. Simpson.*

EXTRA-TROPICAL FORESTRY.

In the *Agricultural Journal of the Cape of Good Hope* for January 1905 was the commencement of a series of articles on "South African Forestry," by Mr. D. E. Hutchins, which are of great interest. The native trees, it appears, are from various causes ill-suited to the requirements of the forester or to the local exigencies. It is therefore necessary to select for planting suitable trees from other countries. Cheapening of timber is necessary to diminish the present high cost of construction, and something needs to be done to stop the efflux of £1,500,000 now paid annually for timber imported into the Colony.

"South Africa, we are told, has long been notorious for the high cost of living, and among the items of this expensive living the most conspicuous is house-rent. Whether one builds one's house oneself or rents it, the result is always the same—an enormously high rental. In many cases as much rent is paid per month in South Africa as would procure the same house for a year in England. The reason for this excessive cost of house-building is the dearness of timber and of labour. When all timber has to be brought a distance of 6,000 miles or more from the northern hemisphere it is easy to see why house-building must be costly."

Extra-tropical climates, as defined by Mr. Hutchins, fall naturally into three divisions, and within these three divisions the trees are generally interchangeable. Thus a Mediterranean tree may be expected to succeed at the Cape (S.W.), California and S.W. Australia or *vice versâ*, but not a summer rainfall tree in a winter rainfall climate. Extra-tropical climates characterised by winter rains are found in the Mediterranean region, in Persia, and as far east as Afghanistan, at the Cape (S.W.), in California, in S.W. Australia, in Mid-Chile.

Summer rains prevail in South Africa exclusive of the S.W. district, Mexico, the highlands of Central America, Yunnan, Mid-China, and Korea, Himalayas, Abyssinia, Argentine (N.), and the highlands generally in tropical latitudes.

All-the-year-round rains occur in Japan, the Gulf States of North America, Mid-Argentine, and Southern Chili, New Zealand and Tasmania, and the equatorial highlands. The presence or absence of technically valuable forest is governed by a minimum rainfall of 20 inches; while the successful selection of the technically valuable species depends primarily on the amount and distribution of the rainfall.

COLONIAL NOTES.

BOTANY AND FORESTRY OF THE TRANSVAAL.

THE Annual Report for 1903-4 of the Transvaal Department of Agriculture contains the following details, furnished by Mr. Jos. Burtt Davy, on the Division of Botany and Agrostology:—"This Division has been very busily engaged in the work of seed and plant introduction, large quantities of seeds of almost every kind have been obtained from different parts of the world, and an elaborate series of tests are being made with them upon the various experimental grounds, and a large number of samples of varieties, which appear particularly promising, have been distributed to farmers for trial and report. These co-operative experiments are much appreciated, and will serve the double purpose of eliciting information and bringing the Department more closely into touch with the farmers.

In addition to the above, investigations have been conducted as to the merits of various native plants likely to prove of economic importance, including veld grasses. Attention has been paid to poisonous plants, which are the cause of heavy mortality amongst stock in some localities and at certain seasons of the year; many seeds and plants have been identified, and a number of specimens collected for the herbarium. Numerous plant diseases have also been investigated. An assistant for seed and plant introduction was appointed early in the year, and two or three lads have been admitted to the Division as pupils.

Rust and other diseases are very prevalent and troublesome, and the services of a first-rate plant pathologist are needed to undertake this branch of the work. Provision for the post has been made upon the estimates, and it is hoped that before long an officer will be appointed."

In the Division of Forestry the assistant chief forester, Mr. C. E. Legat, reports that:—

"The Transvaal is sadly destitute of trees, and in some districts one may travel for many miles without seeing either a bush or a tree of any kind. At the present time the whole of the timber required by the railways and for building purposes, together with a large quantity of mining timber, has to be imported from oversea at an enormous expense. The value of last year's imports amounted to—manufactured wood, £195,060; unmanufactured, £721,990. Trees are also required for ornament, for shelter against cutting winds, for fuel and ordinary farm use, and for the protection of the water supply.

The soil and climatic conditions are favourable to the growth of trees, and there is apparently no reason why suitable selected varieties should not do well here. Accordingly the Division is taking active measures to amend matters, and has already performed an immense amount of good work. Steps have been taken to preserve such small areas of natural bush and forest as remain.

At five convenient centres sites of from 1,000 to 6,000 acres have been selected for permanent plantations, and at these places nurseries have been established for the dual purpose of providing trees for the plantations and for selling them at low rates to farmers and others.

A central nursery for the raising and sale of trees has also been started near Pretoria. Tree seeds have been obtained in quantity and are supplied to farmers at cost price.

Our hearty thanks are due to Mr. Hutchins, Conservator of Forests, Cape Colony, for a valuable report upon forestry in this Colony and for the advice and assistance he has so frequently and ungrudgingly given us.

Last year, 1,753,824 trees were raised and 921 lb. of seeds sold, and it is hoped and expected that during the coming year operations will be greatly extended. Also 127,265 trees were distributed to the public and to various Government institutions during the past season, and there are now 1,676,499 trees in the nurseries ready for distribution."

Begonia Gloire de Lorraine in South Africa.

It is very surprising to find this Begonia so little known amongst the gardening community here. In Cape Colony the plant is, I believe, grown by two or three individuals, but the only nurseryman who grows it is Mr. E. Brett, of Port Elizabeth, and his stock is small. From what I gather it appears to be somewhat difficult to manage. Like many other little-known plants with a reputation for stubbornness, it was coddled to death. Both of the varieties Turnford Hall and Caledonia have been imported at various times, but my personal experience was at first disappointing, till at last perseverance won. Turnford Hall is practically unknown here, excepting of course from accounts found in the horticultural papers. Gloire de Lorraine with me is given no artificial heat. Cuttings root readily in a cool frame or on a greenhouse shelf, and plants will grow in an unheated pit or frame without the slightest trouble. When better known I predict a great future for this Begonia in South Africa. *Colonial, South Africa.*

New South Wales.

We note the publication of Vol. II., Part 4 (Part XIV. of the complete work), of *The Forest Flora of New South Wales*, J. H. Maiden. It contains descriptions and illustrations of Owenia acidula, Eucalyptus stellulata, Casuarina glauca, and Ficus Henneana. Part 5 of this volume contains Acacia melanoxylon, Eucalyptus coriacea, Casuarina Cunninghamiana, and Atalaya hemiglauca.

Part VI. of *A Critical Review of the Genus Eucalyptus*, J. H Maiden, contains plates and descriptions of Eucalyptus amygdalina, E. linearis, and E. Risdoni.

The Barbados Banana Industry.

The rapid development of the Banana industry in Barbados has hardly received the attention it deserves from the neighbouring colonies. Originated in a modest and tentative way by the Imperial Department of Agriculture, the shipment of Bananas to England is proving eminently successful, and there is every prospect that the trade will soon rank as a permanent and well-established industry in the island. At a critical time, when sugar prices had declined to a ruinous figure, Sir Daniel Morris conceived the idea of making small trial shipments of Bananas to the United Kingdom by the Royal Mail steamers. At the recent Intercolonial Agricultural Conference in Trinidad, Mr. J. R. Bovell, describing the progress of the industry, mentioned that from January 1 to October 31 last year about 8,012 single bunches and 3,656 single bunches in double crates had been exported from the island; and Mr. Foster Alleyne, who gave some statistics connected with his personal experience of the enterprise, stated that the Bananas shipped from one of his estates, numbering 700 bunches altogether, netted no less a sum than 1*s.* 2*d.* per bunch, or approximately £40 altogether. Another Barbados planter realised about £30 last year on an acre under Banana cultivation.

As to the average net profits secured by the planters, the report of a Committee of the Barbados Agricultural Society, recently published, records that notwithstanding loss on certain shipments, when a forced sale of the fruit had to be made, the net return to the planter was about 1*s.* per bunch. At the last Agricultural Conference, indeed, Sir Daniel Morris claimed, on the authority of experts in England, that the Barbados fruit was the "finest that reached the United Kingdom." The Barbados Banana industry, given favourable shipping conditions in the future, seems tolerably well assured. This is no small achievement to accomplish in a year or two, especially when we bear in mind that the Banana industry of Jamaica was firmly established only after twenty-five years of difficulties and disappointments. *Demerara Daily Chronicle, April* 19, 1905.

FOREIGN CORRESPONDENCE.

THE APPLE CURCULIO (ANTHONOMUS QUADRIGIBBUS, SAY).

This insect, which is found over most of the Northern United States and Southern Canada, has been committing depredations on the Apple-crop of South-eastern Nebraska for nearly twenty years. It is not an introduced insect, but before the advent of cultivated fruit attacked the wild Crabs and Haws, and in some localities it still prefers these wild fruits to the cultivated ones. In the older orchards, however, it has turned its attention to tame Apples and Pears, and has become a very injurious insect, and one difficult to control.

The insect itself is a "snout beetle" or weevil, of a rusty-brown colour (sometimes ashy on the thorax), from 3 to 5 millimetres long, with the wing covers broadening from the shoulders backward, and each is provided with a pair of conspicuous humps. The beak protrudes somewhat horizontally, and cannot be folded under, being in the female as long as the body, in the male only half as long. According to our present knowledge the life-history of the Apple Curculio is as follows:—It is single brooded, wintering in the mature state, while all the changes from the egg to the adult are carried on in the fruit. The female beetle in late May or early June bores a hole in the fruit as deep as her beak is long, and much enlarged toward the end, while the opening still remains just large enough for her beak to enter. Into this cavity she immediately deposits the egg, an oval yellowish body about a millimetre in length and a little more than one-third as wide, an operation consuming about five minutes. As soon as the egg hatches the larva makes for the core of the Apple, where it feeds, producing much reddish excrement, and after about a month becomes fully grown. It is then a soft, white, legless grub about $\frac{1}{3}$ inch long, with a hump-backed, much wrinkled body. Unlike the Codlin-moth and the Plum Curculio, this insect does not cause the fruit to fall. The larva remains in the fruit, and after a final moult assumes the pupa state. Another moult after two or three weeks brings on the adult beetle, which cuts a large hole and makes its way out. The adult beetles begin to appear about the third week in July, and continue coming out through much of August, since the period of egg-laying is somewhat extended. In addition to the harm done by the maturing insects in the Apple, their feeding punctures produce irregular knots and swellings which stunt and deform the fruit as well as greatly aid in the spread of the "Apple-rot" fungus by catching and affording entrance for the spores. Moreover, the Curculio attacks the young trees and kills them by drilling them full of holes in rows running lengthwise of the stem.

Remedies.

The known remedies for the Curculio are few, and apparently of little avail. Sprayings such as will destroy the Codlin-moth have scarcely any effect on it, although they probably do some good by preventing feeding and oviposition. Jarring the trees and collecting the fallen beetles on a sheet are only moderately successful, as the beetle is so disinclined to drop that this method can never prove of great value. Destroying the infested fruit by picking it while the insect is therein would, of course, prove beneficial; also all fallen fruit should immediately be removed, as in combating the Codlin-moth. A tobacco decoction is said to prevent injury if applied to young trees, but this has not been well proven. *Lawrence Bruner.*

[This insect belongs to a distinct genus called Tachypterus. This generic name, however, is preoccupied, and in a forthcoming list of the Coleoptera of New Mexico the insect is called Tachypterellus quadrigibbus. *T. D. A. Cockerell.*]

Campanula persicifolia.

About thirty forms of Campanula are cultivated in gardens, and these differ considerably in form, size, and duration, some being biennials, but most of them perennial. All are more or less beautiful for the size and abundance of their flowers, the typical colour being blue, but varying from white to violet, pink being the most uncommon colour. Of all these the most desirable for its beauty and easy cultivation is the Peach-leaved variety, a perennial to be found growing wild throughout the woods of France, but also frequently cultivated. In its natural condition it has but few slender stalks about 3 feet long with long and narrow leaves below, headed by a cluster of pale blue bell-shaped flowers. When cultivated it produces white flowers and also double blue and white flowers. However, it is from seed chiefly that this Campanula is capable of the most improvement, not only in the shape and colour, but also in the size of the flowers. When one sees the clumps of two years' growth from seed, with often twenty to thirty stalks bearing heads of a dozen flowers as large as a claret glass, and compare it with the same flower in its wild state, we are amply repaid for our trouble, and may reckon this the Peach-leaved variety among the most beautiful of our garden plants. It is a fine example of what can be done in increasing the growth and strength of the plant by the sowing of the best seed, and shows how capable of improvement are many of our common wild flowers which we tread thoughtlessly under our feet.

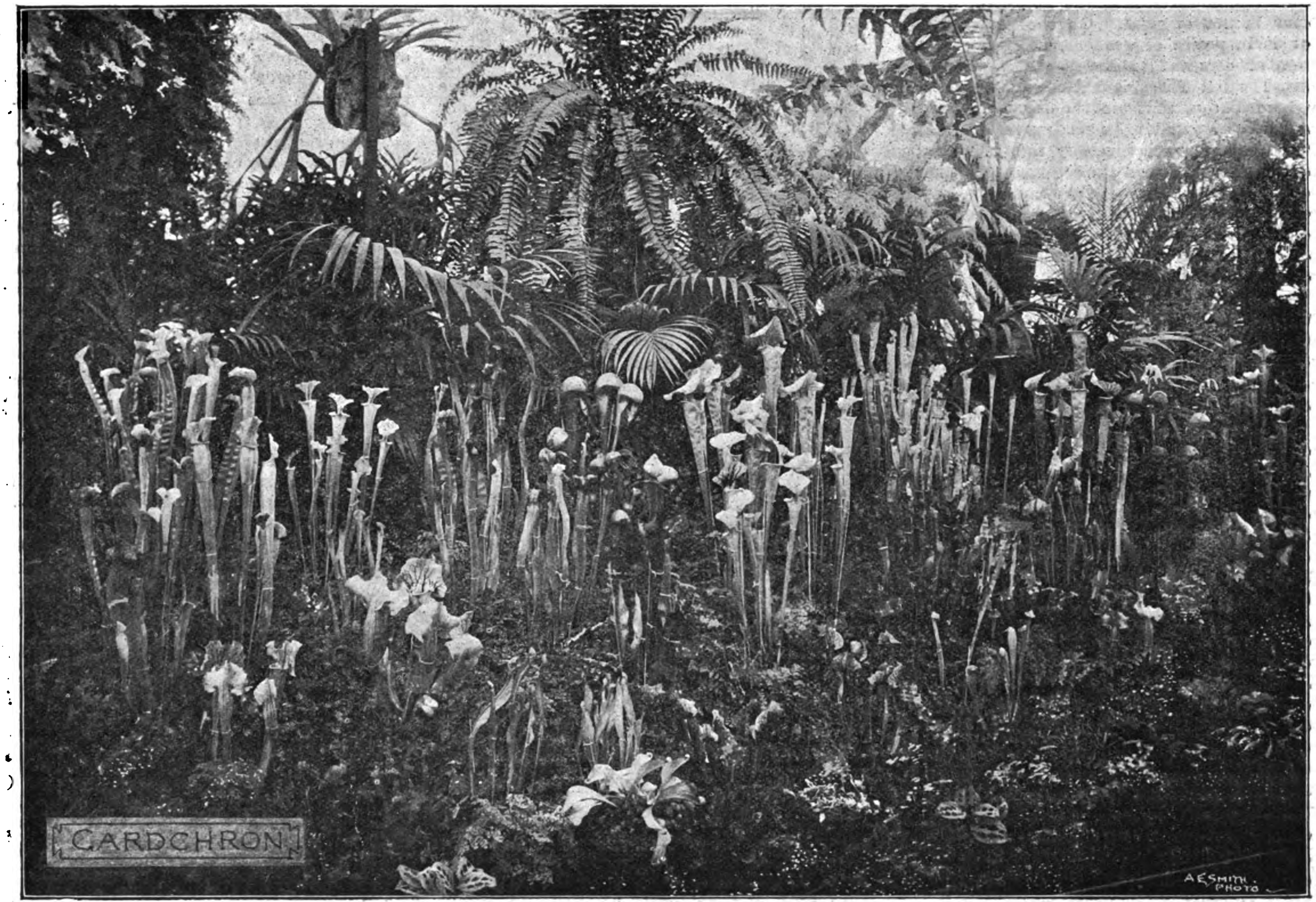


FIG. 160.—GROUP OF SARRACENIAS EXHIBITED AT THE TEMPLE SHOW BY MR. A. J. BRUCE, CHORLTON-CUM-HARDY.

The very fact that the plants are natives of our soil makes them more easy of cultivation here. The white variety is easily grown from seed, and remains particularly true to its type; and an exceptional variety exists in "Morheimi" (see illustration in *Gardeners' Chronicle*, June 30, 1900, fig. 135), which has double white flowers much larger in size than any of those of the kinds already mentioned, and they are produced on long, stiff stems. This newer variety has already been much admired at several flower-shows, but so far it has not been easy to reproduce the variety by seed, so that it must be increased by sub-division and cuttings, which is best done in the spring. For the plain blue and white varieties it is best to depend upon seed. The seed should be sown in May or June in a frame without heat or in a sheltered spot in the open-air, but very little depth of soil must be allowed above the seed. The plants should afterwards be put in a nursery and finally planted-out in the autumn, or better still in the following spring, at a distance of one foot apart. *J. J. Dunnington-Jefferson, 15, Rue Delamore, Boulevard Montparnasse, Paris.*

KEW NOTES.

CEROPEGIA FUSCA, *Bolle*.—This species is now flowering in the succulent-house. It is one of the most distinct plants of this extraordinary genus, most of the species of which are natives of South Africa, having slender, trailing growths. C. fusca is a native of the Canaries, and is arborescent in its growth. The plant has leafless, fleshy stems, about 18 inches in height, with a grey lepidote surface. The internodes vary greatly in length, some of them are only an inch long, while others are fully 2½ inches in length. The growths are constricted at the nodes, at which points the clusters of flowers are produced. They are of a light red-brown colour (those of C. dichotoma, also a Canarian species, are yellow); the corolla tube is 1½ inch in length; the lobes are very acuminate and slightly spreading. There are two seed-pods on the plant, which are subulate in form and 6 inches in length, though not quite fully developed.

CIRROPETALUM ROBUSTUM, *Rolfe*.

This genus is represented in the Kew collection by about forty species, all of which are more or less beautiful. The majority are small in structure, only a few having large growths and flowers. C. robustum, from New Guinea, is one of the largest species grown at Kew, and one of the most showy. It was introduced into cultivation by Messrs. James Veitch & Sons, of Chelsea, and was illustrated in the *Gardeners' Chronicle* in 1895, ii., fig. 116. The plant now in flower has monophyllous pseudo-bulbs, the largest leaf being 14 inches in length by 3½ inches in breadth, the stout flower-scapes, produced from the base of the pseudo-bulbs, are from 4 to 6 inches in length. The largest inflorescence on the plant now flowering in the warm Orchid-house has fourteen blooms, each of which measures 3½ inches from the apex of the dorsal sepal to the tip of the connate lateral sepals. They are of a tawny-yellow colour, the prominent lip being of bright, glossy ruby-red.

× PHILAGERIA VEITCHII, *Masters*.

This is a very interesting hybrid now flowering in the cool Fernery (No. 3). It is, as the name indicates, a hybrid between Philesia and Lapageria, and was raised by Messrs. Veitch, of Chelsea, many years ago (see *Gardeners' Chronicle*, March 16, 1873, figs. 119 and 120). There are but few plants in cultivation, probably this is due to the fact that it is rather a slow grower, and that horticulturally it is not so useful a plant as the Lapageria, which parent it more closely resembles. The Kew plant is one with branched flexuose growths some 6 feet in length, with leaves that vary greatly in size, the largest being about 2 inches long by ¾-inch in width. The Lapageria-like flowers are solitary or in pairs; they are deep red in colour, the inner segments are about 2 inches long, and broadened at the apex; the outer segments are only half the length of the inner ones, and have an acute apex. *W. H., June 6.*

BOOK NOTICE.

GARDEN COLOUR. London: 29, Bedford Street, J. M. Dent & Co. New York: E. P. Dutton & Co.)

A volume divided into four sections, one for each season of the year, and treated of by the following authors:—Spring, by Mrs. C. W. Earle; Summer, by "E. V. B."; Autumn, by Rose Kingsley; and Winter, by the Hon. Vicary Gibbs. Notes and water-colour sketches are furnished by Margaret Waterfield. This is one of those handsome, we may say sumptuous, books on gardening of which we have of late years seen so many. The collaborators have done similar work before, and their writing, as far as its style goes, will be familiar to our readers. It is not to be inferred, however, that the matter of *Garden Colour* is not original. On the contrary this book is in praise of gardens, according to the several authors, and it is based upon two considerations. The first of these is that long ago propounded by Lord Bacon, that "in the royal ordering of gardens there ought to be gardens for all months of the year, in which severally things of beauty may be in season;" and the second proposition is that arrangement of groups and individual plants according to their habits, forms and colours is most desirable. The beauty of appropriateness should never be overlooked, indeed, should form the first consideration.

The object of the book is to "illustrate the value of artistic massing of colour, a skilful grouping of one variety of plant, and to suggest an ideal for the garden lover of to-day—pictures in flowers changing from day to day and month to month."

The object thus defined is well carried out, and we must not complain if other and equally important aspects of gardening are purposely left on one side. A garden is or should be something more than a picture, for if harmonious colouring be the sole object, why not go back to coloured stones and brightly-tinted fragments of glass, as in a cathedral window. Indeed the illustrations to the book show that the charm of a garden is by no means dependent simply on well-balanced harmony or striking contrasts of colour. A picture on the one hand is lifeless—it may and does excite sympathy and kindle emotions, but itself is dead. The whole garden, on the other hand, is alive. Its inmates are living beings toiling and struggling each in its own way to fulfil its destiny under the conditions in which it is placed.

Love for picturesque effect is certainly enhanced by the study of plant-life and the investigation of the great drama enacted under our eyes, and it is certainly not lessened by accuracy. This is a quality which is somewhat missing in the volume before us. Thus the beautiful blue-flowered Coleus, lately introduced by Messrs. James Veitch & Sons, is here named "Coleus Thyrsoidens." Capitals are used throughout in the most erratic fashion. Thus we have "Crocus Etruscus, C. Biflorus, C. Chrysanthus, Tulipa Sylvestris, T. Reflexa." 'Mittallia" represents what is generally known as Nuttallia. We should have supposed this to have been a misprint, but that it occurs more than once. "Felicité Perpetué, Ranunculus amplexicaules, R. Acris, Oreocoma Candoblii," and very many more such dissights show that the proofs have not been so carefully read as they might have been. These are matters of minor importance in a book of this character, but they are disfigurements nevertheless, and engender a distrust of the value of the subject-matter, a distrust which is not in reality justified.

The illustrations are of unequal merit—some are very beautiful and truthful, others are of an impressionist nature, requiring the aid of the legend before one can decipher what the artist intended to convey.

When we say that Rose-culture is the subject of an article by Mr. George Mount, and that Mr. Vicary Gibbs's excellent paper on "Trees and Shrubs for Autumn and Winter Effect" is reprinted from the *Journal of the Royal Horticultural Society*, it will be admitted that the text of the book varies in quality, as do the illustrations.

The book is handsomely got up, well printed, and provided with an index, in which the names of the plants, though by no means always correct, are not so frequently misspelt as they are in the text. It would be a work for the drawing-room table if the display of books in that way were still in vogue; and it would make a charming present to a garden-lover, as affording a profusion of useful hints and suggestions.

RUBBER.

THE following extract is taken from Mr. Eugène André's *A Naturalist in the Guianas* (Smith, Elder & Co.), and reviewed in our columns September 17, 1904, p. 197:—

Of rubber, two kinds are shipped, true rubber, the product of trees of the genus Hevea, and Balata rubber, obtained from the order Sapotaceæ, the principal source of supply being Mimusops balata. The true rubber, or rather india-rubber, is similar to the article exported in such large quantities from Pará in Brazil, and like the Brazilian product it comes from considerable distances in the interior. Whereas india-rubber has been known to science for quite a length of time,* and has been put to commercial uses for more than half a century, it is only within the last decade that an extensive trade in Balata gum has sprung up, although so far back as 1857 Professor Bleekrod called attention to its value as a substitute for guttapercha.† The tree producing this gum is one of the largest of forest-trees. Its timber is exceedingly hard, heavy and durable, and is of a fine claret colour. It is found all over the West India Islands and in Venezuela, being particularly abundant in the Guianas, where the preparation of Balata gum has become within the last four or five years a very important industry. Unfortunately the method employed to obtain the gum is sure to lead to the destruction of this industry, which if conducted on intelligent principles might constitute a permanent source of wealth to the countries where the Balata tree is found in the forests. It is almost impossible to exercise any control over the gum-collectors in the vast expanses of forest where their operations are carried on, so that they are at liberty to work in whatever manner they choose, and they have in consequence adopted the method which gives the least labour and the biggest return. Instead of judiciously tapping the trees, the gum-collectors throw them down, and then, by scoring the bark of the trunk and branches, they secure all the sap they can, which they then boil and cast into rough moulds. Sometimes the gum is brought to market in the shape of large blocks. The experienced trader, who has learnt that these blocks may contain heavy stones or other materials not valuable as gum, is very careful in dealing with this class of merchandise. Like most hard-wood trees, the Balata is of very slow growth. Those giants of the forest, recklessly destroyed in a few short hours, have taken hundreds of years to attain their full development. In ten or fifteen years there will not be, it is to be feared, a single Balata-tree in the districts where gum is being obtained by the destructive system in vogue amongst the collectors. What is most to be regretted in the wholesale destruction of these trees is that the very valuable timber they might supply is allowed to remain and rot on the ground. Of course the reason for this is that in most cases the trees are found in the depths of the forest, far from any road, so that the dragging out of logs of this heavy wood would be an undertaking too costly to leave any return on the outlay."

SMALL FRUITS IN FOREIGN CATALOGUES.

ALTHOUGH many of the kinds and varieties of small fruits found in gardens in this country are much appreciated on the Continent, there are others which from a variety of reasons are much grown and liked for culinary and dessert purposes there which are comparatively unknown in England.

Taking that useful fruit the Red Currant, mention may be made of the variety Pomona, which produces very long "straps" or bunches, measuring sometimes 15 cm. each, with from twenty-seven to thirty even, middle-sized berries. The bush is a most prolific cropper, and the variety is of American origin. The Red Seedless ripens late in the summer, greatly extending the Currant season, rendering it an excellent variety for growing on the north aspect of walls and on north borders. The fruit is not really destitute of seeds, but these are scarcely distinguishable when eaten, and in consequence of this feature, and its handsome, dark red tint and pleasant flavour, it is well adapted for preserving whole in preference to all other varieties. Red Currant Star of the North likewise possesses very long bunches and berries of middle size, and the bush has great cropping powers. A new American introduction.

Of Raspberries, the varieties grown are chiefly those we grow here, the exceptions being Shaffer's Colossal (see *Gartenflora* for 1891), with very large purple fruits. The variety is a cross between a red and black American Raspberry. The plant is very productive, and makes no suckers. In flavour it is inferior to our red and yellow varieties. Other excellent and productive Raspberries are Von Türcks, a heavy bearing, early variety, good as a market fruit; Vorster's Grosse, fruits very large and dark-red in colour, an excellent dessert fruit; and Double-bearing, from Feldbrunnen, in size very large, in colour red, and of great productiveness in the autumn. The growth is extremely vigorous, and the fruit-crop is not influenced much by periods of drought, thereby making the variety very valuable for field culture. It is of German origin.

Under Brambles (Blackberries), mention may be made of Newman's Thornless, the fruit of which commences to ripen at the end of the month of August. It is black and rather large. The plant is pretty productive and almost destitute of thorns. Another thornless variety, the identity of whose origin is not known with certainty, is met with in some lists. The shoots are said to carry on an average 100 fruits each, and with heavy manuring the crop can be increased from four to sixfold.

Among numerous novelties in Strawberries, note should be made of Deutsch-Evern, which is distinguished by its great earliness, heavy cropping, and magnificent colour. The fruit is of middle size, and of a fine, mild flavour, and the flesh very firm, making it an excellent marketing variety, as it bears transport without injury, a matter of great importance with Raspberries, Strawberries, and Blackberries.

Of varieties of the Strawberry there is nothing better than those we possess, although for field cultivation for market purposes the following are highly commended in German lists—viz., König Albert von Sachsex, Kaiser's Sämling, Garteninspektor A. Koch, and Belle Alliance. In alpine varieties Belle de la Parraudière, with shining red fruits of a large size for an alpine, and capital flavour; Belle de Montrouge has its fruits surrounded by a leaf-like calyx, and is a continuous bearer; of this there exists a white-fruited variety. There are two without runners, viz., Busses, white and red-fruited, an abundant cropper, and of excellent flavour; Holland's Glory is a large red-fruited variety, 4 cm. long and 2 cm. broad, very juicy and fragrant. Schöne Anhalterin has very large carmine-red fruits, which colour thoroughly to the point. The flavour is delicious, and the plant a great bearer.

---

* Torquemada, in his *De la Monarquia Indiana*, published at Madrid in 1615, says: "There is a tree which the Indians call Ulequahuitl. It is held in great estimation and grows in the hot country. It is not a very high tree; the leaves are round and of an ashy colour. This tree yields a white milky substance, thick and gummy, and in great abundance."

† *Journal of the Society of Arts*, October 9, 1857.

There are two species of edible Sorbus cultivated in Russia and eastern Germany and Austria which are likely to find acceptance in this country as compôte fruits, one being the Russian S. Aucuparia rossica, whose fruit, of the size of culinary Peas, is preserved in immense quantities in the conserve factories at Kieff. The process consists of covering the fruit with sugar in the dry state and exposing it to dry cooking. When finished, the fruit is packed in canisters and small boxes for sale, export, &c. The fruit has a pleasant, sweet-sourish taste, combined with a slight bitterness and astringency.

Sorbus Aucuparia moravica has scarlet-coloured fruits, which make wholesome, enjoyable compôtes, and are also employed in wine manufacture. The berries are a little larger than the Russian variety, but in flavour they are considerably more astringent. *F. M.*

THE FERNERY.

A CURIOUS FERN PEST.

AT this season of the year, when Fern-fronds are uncoiling, I frequently find that the tips of the fronds of Athyrium and Blechnum, and rarely of other species, suddenly flag as if for want of water. One or two on a plant suffer in this way, the rest being unaffected. This flagging affects only the upper portions, say 3 or 4 inches, and to the naked eye no cause exists; but on holding the midrib up to the light and examining it with a lens, a slight discolouration is seen at the point where the flagging begins, and on splitting open the midrib it is seen that the central vein is cut through, a brown stain showing at the point of severance. If left alone the top withers entirely, and a small maggot, or usually two, is hatched from a deposited egg or eggs, and commences to eat its way downwards, growing as it proceeds, until eventually the entire core of the frond-stem becomes eaten away and is replaced by brown dust, while at the lowest portion of this one or two maggots about ¼ inch long, and of a pale bluish tint, will be found prior to their emergence when full grown. Curiously enough, although this pest attacks Ferns under glass, I have never yet been able to detect the egg-laying fly at work or even hovering about; nor so far have I been able to ascertain what it is like, which I should very much wish to do, as it is a great nuisance where it prevails. It is my practice now to pinch off the affected tips about an inch below the wound immediately they flag, thus, of course, removing the eggs and preventing to that extent a further generation of flies; since if the frond be left, these flies will inevitably emerge later on from the very base of the frond-stem, unless, as I conceive is possible, the maggots emerge and assume the chrysalis stage in the soil, appearing as flies the following season. This seems the more probable, as I do not find fronds attacked except in the spring, and only when they have nearly uncurled, completed fronds remaining untouched. This, coupled with the softness of the young tissues of the two species of Ferns named, indicates too that the fly has no power of piercing matured and tougher tissues. *C. T. D.*

ODONTOGLOSSUM CRISPUM "RAYMOND CRAWSHAY."

OUR illustration (fig. 161), taken from a plant of this fine variety exhibited by De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables), at the Royal Horticultural Society, April 4, 1905, shows in its perfected condition a flower of a variety which has been much admired for its perfect shape and rare colouring. The variety was exhibited in an early stage of development, May 7, 1901, when it was given an Award of Merit. It was again shown in perfect condition at the Royal Horticultural Society, November 12 in the same year, when a First-class Certificate was accorded. The reverse of the segments is tinged with purple, and the beautiful spotting is of various tints of orange-red colour shaded with rose.

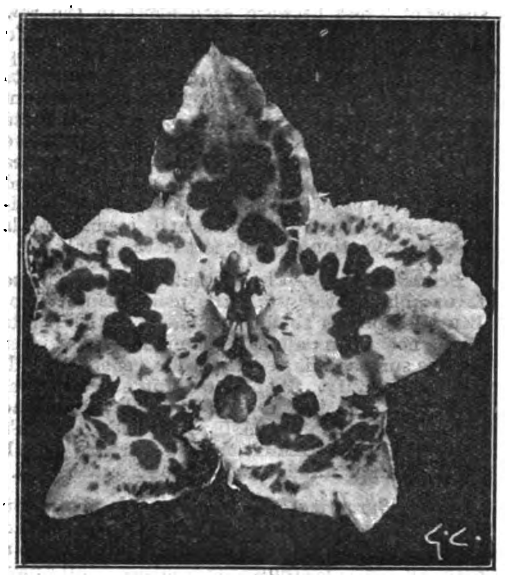


FIG. 161.—ODONTOGLOSSUM CRISPUM "RAYMOND CRAWSHAY."

PLANT NOTES.

STREPTOSOLEN JAMESONI.

THIS showy plant, with its masses of orange-coloured flowers, succeeds best when allowed a position quite near to the glass roof, where its long, pendulous shoots with their terminal flower-heads are shown to the best advantage. Here it is planted in quite a small border at the warmest end of a span-roof greenhouse, the main growths being trained to within a foot of the glass, to which we attribute our success in flowering it so successfully. The glass is lightly shaded when the flowering period arrives, and it remains in beauty for a period of quite six weeks. When the flowers are over the plant is cut hard back, as is done in the case of Bougainvillea glabra, and like that plant it pushes forth many shoots, which require to be well thinned out in order that the remaining growths may receive the maximum amount of light. These new growths must be allowed to grow unchecked, and must not be subjected to pinching or stopping; in fact, the treatment should be identical to that given to Bougainvillea glabra. The plants must be frequently watered and not allowed to become dry; when in active growth especially they require liberal applications of manure-water. No stimulant should be given during the week before pruning, but it should be applied for some weeks afterwards, and until the new shoots are making headway. At that stage a little of the surface-soil should be removed with a pointed stick, and fibrous loam and leaf-soil, with a little bone-meal and sand, substituted. The plant should be syringed twice daily up to the end of September; this will ward off thrip, the only insect we have noticed to attack this plant.

Serviceable little plants to flower in April can be had by inserting cuttings during May and by standing them in a close propagating-box in a north aspect, shifting them when nicely rooted into 2½-inch pots, and eventually into 48's. Let the plants be fully exposed to the sun until frost threatens, they should then be removed to quite a light position, out of the reach of danger from frost. We train our plants with a single stem, but I see no reason why three shoots should not be encouraged by nipping out the point of the shoot a week or ten days after the first potting is accomplished. For summer bedding the plants proved a failure here. It would be interesting to hear of any reader who has been successful with them in this respect. *James Mayne, Bicton Gardens, Devonshire.*

ARENARIA MONTANA.

This Sandwort, sometimes known as A. grandiflora, was especially attractive in May on the rockery, where it is quite at home. Its large snow-white flowers with yellow anthers are very attractive, produced as they are quite freely. As an edging to a path creeping over rough stones or at the front of the herbaceous border, with a few stones piled up where the growth can creep over, it is a desirable plant, and quite one of the best of May-flowering Alpines.

TRILLIUM GRANDIFLORUM ROSEUM.

This is a fine companion plant to the variety T. grandiflorum, so well represented on p. 308. The warm-pink or pale-rose hue on the flower is so pleasing a contrast to the pure white of the type, and flowering as they do simultaneously, they make a bright display on the rockery in April or the early part of May. *E. M.*

AGAPETES MACRANTHA, *Hook., f.*

This plant, like many other hardwooded greenhouse subjects of early introduction, is now seldom seen in cultivation, although it is a charming plant when in flower, and is one of the best garden plants of the Vacciniaceæ. It forms a loosely-growing shrub with smooth, leathery, lanceolate leaves. The flowers are produced in early spring on the older wood in clusters of three or four. The five-ribbed tubular corolla is 2 inches in length and ¾ inch in diameter, measuring about ½ inch across the mouth. When fully developed the five lobes are well reflexed. The flower is stiff and wax-like, of a pale rose colour, beautifully veined with claret-coloured markings. The plant was introduced about fifty years ago by Mr. Veitch, of Exeter, who raised plants from seeds gathered on Kola Mountain, Moulmein, by Thos. Lobb. It is figured in the *Botanical Magazine*, t. 4566, under the name of Thibaudia macrantha. Plants were sent to the Cambridge Botanic Garden some years ago by Mr. W. B. Latham, at that time Curator of the Birmingham Botanic Gardens, who cherished many worthy plants that are now not often seen in cultivation (see *Gardeners' Chronicle*, January 19, 1901, p. 47).

HETEROTOMA LOBELIOIDES, *Zucc.*

Of the four or five existing species of Heterotoma, H. lobelioides is the only one in general cultivation. It is a native of Mexico, and is known as the "Bird Plant" on account of the shape of the flowers somewhat resembling that of a bird. The plant is a herbaceous perennial, and grows to a height of from 1 to 2 feet. The leaves are pale-green, broadly ovate, and have an irregularly-serrated margin. The flowers are borne on loose racemes at the extremities of the shoots. The tube is of a purple colour, with the upper half yellow. The plant is not nearly so well known as its merits entitle it to be, for when grown in pots it makes a charming decorative subject for either the conservatory or the greenhouse. It commences to flower in March, and keeps in good condition for at least two months. Cuttings are easily rooted, and if these are given the same treatment as is allowed to other soft-wooded greenhouse plants they will not fail to give satisfaction. It is also worthy of a trial out-of-doors, and may prove to be hardy. Lobelia laxiflora, one of its allies, and also native of tropical America, has been doing well out-of-doors here, planted against the wall of a greenhouse, for some years past. *E. J. Allard, Botanic Garden, Cambridge.* (See figure in *Gardeners' Chronicle*, August 1, 1835, p. 137.)

HARDY PLANTS.

VANCOUVERIA HEXANDRA.

A NEAR ally of the Epimediums, the Vancouveria has much of the elegance which characterises the majority of these attractive and valuable plants. That it is far less often seen than they is a little surprising; for it has a character of its own, and is worthy of cultivation even where the Epimediums are well represented. Its scarcity cannot be due to any want of natural increase, as it runs freely at the roots, and once established it grows so vigorously that it may even become a troublesome subject if planted in an unsuitable place. Yet it is only when seen in a bold group, or better still in a mass, that the Vancouveria shows its true beauty. This beauty does not lie in the brilliancy of its flowers or a bold and effective habit. On the contrary, its flowers, which are simply yellowish-white, are not such as invite the eye of a casual looker. They are small, of a yellowish-white colour, but their singularly pretty form will please and hold the attention of the true lover of flowers. Nor is its character a bold one, for it forms a group of graceful leaves and slender stems only from 6 inches to a foot high. These leaves are however of beautiful form, and in colour a lovely green shaded with purple, and in themselves most delightful. Although the Vancouveria can be cultivated in sun as well as in shade, it yet prefers a rather shady position and a peaty soil, with a fair amount of moisture in summer. It is easily divided, and the underground offsets which it makes so freely can be taken off to increase the stock.

The running character of Vancouveria hexandra, which is the only member of the genus in cultivation, makes it necessary to give its position due consideration. A good place for it is by the side of a pond; but it must not be hidden by grosser vegetation. A better position would be that at the base of a good rockery. Here it would receive the benefit of the water which drains from above, and, given a fair space, it will be long before it requires to be kept within narrower bounds than it would desire. This species, although introduced as far back as 1827, is not common, either under its true name or under the synonym of Epimedium hexandrum. *S. Arnott, Carsethorn-by-Dumfries, N.B.*

PLANT PORTRAITS.

CYPRIPEDIUM (1) AURIFERUM, (2) ALBERTIANUM, (3) MME. JULES HYE, (4) ELMIREANUM.—*Revue de l'Horticulture Belge*, May.

CATTLEYA WARSEWICZII.—*Gartenwelt*, May 6.

ANGELONIA INTEGERRIMA, Sprengel.—A Pentstemon-like perennial from Paraguay. *Gartenflora*. May.

APPLE CELLINI.—*Bulletins d'Arboriculture*, May.

The Week's Work.

THE KITCHEN GARDEN.

By W. FYFE, Gardener to Lady WANTAGE, Lockinge Park, Wantage.

Planting Broccolis and Kales.—On stiff, retentive soil the work of planting proved very difficult during the dry weather in May, especially on ground that had not been well prepared previously. But after the rain of the past week the work can be done with a comparatively small amount of labour and with better results. Broccoli, like all other Brassicas, delight in a rich, heavily-manured soil, but those intended to stand through the winter must not be planted in such conditions. A moderately rich, stiff soil will answer the purpose better, and with a fairly loose surface to plant in nothing further is necessary. If the position is an open one, is well drained, and has some shelter from the north, so much the better. Allow spaces of 3 feet between each plant in the row and a similar distance between the rows also. No greater mistake can be made than that of putting the plants too thickly together, for weakly plants are injured by the first sharp frost. The system of drawing deep drills in which to place the plants has something to recommend it because during the time they remain open they are good receptacles for water, and as the drills are gradually filled in when the plants become established, the additional soil about the roots and stems affords greater protection and support to the plants.

Brussels-Sprouts—The present weather being so favourable for this work, the main plantation of Brussels-Sprouts should be made if the plants have not been already planted. No winter Greens surpass this vegetable for general usefulness and quality. Plant the Sprouts at distances of 2 feet 6 inches to 3 feet each way. The same remarks apply to Asparagus and Cottager's Kale (Veitch's Exhibition and Carter's Welsh Kale), both of which are useful and ornamental.

Purple Sprouting-Broccoli.—A good plantation of this is one of the most useful vegetables in season during an early spring which follows a severe winter. Continue the planting of all green crops as the plants become of a sufficiently large size. If the plants have been subject to clubbing in previous years, let the ground be given a good dressing of air-slaked lime previous to planting.

Parsley.—Attend to the thinning and planting of this crop. It is seldom that an over-abundance of Parsley is found in the garden.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Cattleya Warscewiczii (gigas).—This glorious summer-flowering Cattleya should be repotted or resurfaced as soon as new roots are seen to emerge from the base of the developing growths. To induce this plant to flower regularly, it is essential that moderately dry conditions obtain at its base until the flower-sheaths appear. When repotting is carried out, retain as few of the old leafless pseudo-bulbs as reasonably are needed. Let the pots or pans be furnished to two-thirds of their depth with crocks, placing them edgewise, and fix the plant in position with good fibrous peat and a little sphagnum-moss. Stage the plants in the lightest and warmest part of the Cattleya-house, and until the new roots are growing freely in the fresh materials apply only very little water, but afterwards and until the resting period begins a good supply will be needed. Moisture sometimes collects beneath the sheathing bracts of the young growths, and causes them to turn black. Where this occurs carefully strip the sheaths back, and dust the parts with powdered charcoal or sulphur to prevent decay or rot. Cattleya Dowiana and its variety aurea, also the hybrid C. × Hardyana, need similar conditions and treatment to those afforded C. Warscewiczii. If the roof of the house is some little distance from the stage, plants of the above are better suspended. New surface materials may be afforded soon after growth commences, but repotting should be deferred until new roots emerge from the base of the growths. A very generous supply of water is needed when the plants are rooting freely, but at other times infrequent and somewhat meagre supplies will be sufficient.

Cattleya Warneri.—Plants of this need rather dry treatment until the flowering period arrives, as they seldom emit roots before that event. It is most successfully cultivated when planted in suspended baskets or pans that have ample drainage, applying a thin layer of peat and sphagnum-moss about the roots. Much water is needed only when the plants are rooting freely. Plants of C. labiata, now fast developing their growths, need careful management during changeable weather or injury may overtake them; too much moisture in the air or at the base, in conjunction with a falling temperature, often proving fatal. This species needs moderate shade during the bright hours of the day, and a considerable degree of heat to develop its growths.

Odontoglossum citrosmum.—When the plants have flowered apply fresh surface materials or afford new receptacles as each case requires. The best results are obtained when they are grown in baskets, though if leaves be introduced into the compost pans are preferable. When putting them into baskets place a large crock or two on the bottom, and fill in with good, lumpy peat and sphagnum-moss. If using a mixture containing leaves, employ more drainage material and surface with peat and sphagnum moss in the ordinary way. Suspend the plants in the Cattleya or intermediate-house, and in either case apply sufficient water to keep the materials moist. Those plants in baskets naturally need more frequent supplies than those in the leaf-mixture. When the pseudo-bulbs are perfected, a long rest in dry conditions should follow. The cool-growing Odontoglossums should be allowed a rest when the flower-spikes have been removed by keeping the plants dry at the base, so long as excessive shrivelling does not occur in the pseudo-bulbs.

FRUITS UNDER GLASS.

By F. JORDAN, Gardener to Dr. CORBET, Impney Hall Gardens, Droitwich.

Pines.—Fruits of early-forced Queens, which should now be colouring, have had a very favourable time during May, the sun's heat alone having produced a temperature of 90° to 95° after closing time. Discontinue the use of all manures. Maintain a steady bottom-heat, increase the amount of ventilation, and gradually reduce the supply of atmospheric moisture in order that the fruits may be of good colour and high flavour. Should too many fruits be ripening concurrently, remove some of the plants to a cooler house before they have fully ripened their fruits. At the same time remove and pot any suckers that are of sufficient size for the purpose. The fruits will have better flavour and colour if they are allowed to ripen in an atmosphere that is not very moist. Later plants that are swelling their fruits should receive twice weekly alternate supplies of farmyard liquid manure and guano-water applied liberally. Maintain sufficient atmospheric moisture by damping all available spaces in the house, and by syringing the beds and bases of the plants with weak guano-water. Damp the plants lightly overhead with clear water, but do not cause much water to fall on the crowns of the fruits. Give ventilation freely, especially during the early hours of the day, and allow a small amount of ventilation during the night, opening the ventilators for this purpose at about 7 P.M. Shade the plants lightly during the middle of the day for a few hours to maintain a good colour in the fruits, and prevent the plunging material about the base of the pots becoming dry by applying copious waterings, being careful to see that the water is sufficiently warm for the purpose.

Successional Plants.—The earliest of these will now be well advanced in growth and should be given alternate waterings of weak guano water, liquid manure, and soot-water. Keep the night temperature about 5° lower than is maintained for fruiting subjects, and encourage the plants to make sturdy growth. Plants that are required for autumn and winter fruiting should be allowed somewhat drier conditions, and be given increased ventilation, so that they may have a short rest before their fruits appear. Examine younger plants, and afford them the same careful attention as is recommended for older ones. Repot the plants before they become root-bound, or they will suffer a check, which may cause them to fruit prematurely. Suckers should be potted when sufficiently developed, and the pots plunged in a brisk bottom-heat, where the plants may be shaded from bright sunshine. A bed of leaves placed in an old pit will form a suitable place for plunging these young plants. It will be necessary to keep the atmosphere close for a time.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Grafted Fruit-trees in this locality are rather backward in making growth owing to the want of rain we have experienced. Attention must be given in order to prevent the ligatures from cutting into the bark as growth proceeds. In districts where the union between scion and stock is already complete, and this can generally be determined by the amount of growth the scion has made, these ligatures may be carefully removed. The growth from each graft should be effectively secured to a stake to prevent its being blown out by the wind, the stake used being one that is long enough to support the growth as it increases in length. In cases where the graft has not been successful, a single shoot may be induced to grow from the stock below the graft. This will be sufficiently strong to bud during the coming season. All growths appearing from points below the grafts on young stocks should be removed, but in the case of old trees that have been headed down, a few shoots appearing round about the scion will be useful to encourage root-action, and increase the flow of sap, but they should be removed gradually after the scions have commenced to grow freely.

Morello Cherries.—If the crop is too abundant, those fruits which are hanging towards the wall may be removed, and the bunches of fruit be judiciously thinned by means of a pair of scissors. If there is a trace of black-aphis, apply a solution of soft-soap in soft-water, or one of the prepared extracts of Quassia, afterwards giving the trees a thorough syringing with the garden-engine, which will clear away the remains of all flowers and other refuse likely to form lurking-places for insect-life.

Sweet Cherries.—The earliest varieties of this class, such as Guigne d'Annonay, Bigarreau Jaboulay, Early Rivers, Frogmore Early Bigarreau, and May Duke, are now beginning to change colour on walls. The last-named variety is used more for culinary purposes than for dessert. Examine the trees in case there are black or green-fly on them. If these pests are allowed to spread at this season, they will spoil the ripening fruits by the adhesive substance deposited on them. It is rather late to use Quassia-extract for cleansing purposes on trees with the fruit changing colour, as the liquid might impair the flavour of the fruit. Therefore apply a good washing with soapy water used with force through the syringe or garden engine, afterwards washing this off by clear water also from the garden engine. Securely net the trees from the attack of birds. Keep the roots of the trees in a uniformly moist condition by artificial waterings when these are necessary.

Strawberries.—The rains during the last week have proved a salvation to this crop, and as the forward fruits were then half grown, a slight dressing of artificial manure will improve them in size and colour, besides causing the later fruits to become larger in size. Strawberries should now be protected from birds, and large plantations may have a light framework erected over the beds upon which the netting can be placed. The fruits can then be gathered more conveniently than is the case when the nets are placed directly on the plants, and such a structure is, moreover, a more efficient protection from birds.

Disbudding should be continued while growth is soft, doing the work periodically until all the thickly-placed shoots throughout the trees have been removed, and pinching the points out of those which will be retained as spurs. This work will be necessary for a few weeks longer in the case of cordon Apple and Pear-trees, for although these are worked on the dwarfing stocks, they make a large amount of growth, necessitating considerable thinning and stopping, if the use of the pruning-knife later is to be dispensed with and the tree is to be kept in a well-balanced and fruitful condition. Care should be taken that the trees are not denuded of much growth at one operation.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Salpiglossis and *Dianthus.*—Salpiglossis requires a light but rich soil in a sheltered and sunny place. Dianthus Heddewegii and Zinnias require fully-exposed situations.

Herbaceous Plants. — When the flowers of Pyrethrums have faded, in order to induce the plants to flower again in autumn, cut off the old leaves and stalks and apply a good mulch, affording water when necessary. Doronicums, Oriental Poppies, and Potentillas can be treated similarly. Gaillardias raised from seed may be planted now in warm, well-drained soil. Fritillaria imperialis, F. meleagris, and other bulbous plants will have sufficiently ripened their growths that they may safely be cut away. In order to fill up bare places plant Paris Daisies, Nicotianas, Cannas, and other quick-growing subjects. Cyclamen hederæfolium raised from seeds sown where ripened are now fit to transplant. Prepare a piece of gritty ground enriched with leaf-mould, and prick out at a few inches apart. With a little care they will make flowering root-stocks in two seasons. Platycodon grandiflora sown early requires to be planted in nursery-beds. Sow seeds of Myosotis for supplying plants to fill the beds in autumn.

Carnations infested with green-fly should be syringed with a reliable insecticide distributed by means of an Abol syringe.

Annuals. — Half-hardy annuals may now be safely planted—Arctotis grandis, Nemesia strumosa, Schizanthus, Solanum Balbisii, and others. Afford the plants good soil, and provide them with shelter from winds. The earliest sown hardy annuals will soon require to be thinned. Let this work be done on a dull morning. Some of the quick-growing annuals, such as Nemophila insignis, may still be sown.

Climbing Plants require frequent attention in regard to the tying of growths, &c. Many plants are growing in sheltered nooks about buildings and need frequent applications of water from the hose-pipe. If red-spider should gain a footing it must be fought vigorously by means of one of the insecticides, such as Spidacide or Niquas. Half-hardy climbers, such as Cobœa scandens, Mina lobata, Maurandyas, Nasturtiums, and Solanum jasminoides may be planted. Afford them liberal treatment. They are suitable for planting against walls, on pergolas and in other places.

Store Plants.—Select strong plants of favourite strains of Lobelia erinus, dwarf Heliotropes, Tropæolums, Ageratums, &c. Plant them in 5 or 6-inch pots, and place them in the reserve ground. Do not allow them to flower. By pinching the growths a few times they will make sturdy stock plants for another season. If tall Ivy-leaved or other Pelargoniums are used for pillars, &c., pot on the required number and grow them for another season.

Packing Flowers will be an every-day occurrence. Cut the flowers in early morning (evening is next best time), and place them loosely in water for a few hours in suitable receptacles in a cool shed. Have proportionate boxes for size and quantity, and moisten the insides. Line the boxes with packing and tissue-paper. If practicable, pack one kind of flower in a box by itself; but if the flowers are mixed put the heaviest in the box first. Pack firm enough to prevent the blooms shaking during transit. Avoid cutting flowers when they are full of rain-water.

PLANTS UNDER GLASS.

By A. Bullock, Gardener to E. J. Wythes, Esq., Copped Hall, Epping, Essex.

Chrysanthemums.—Early-rooted cuttings that were potted into 6-inch pots as advised in a previous Calendar will now be ready for transplanting into the pots in which they will flower. Preparations should be made at once for this work to be carried out. Do not make too free a use of artificial manures of any description when preparing the compost. Better results will be obtained by judicious feeding at a later stage. In mixing the compost use six barrow-loads of good fibrous loam, one of old mortar-rubble, one of spent manure from a Mushroom-bed, two pecks of charcoal, one peck of bone-meal, together with just sufficient silver-sand to keep the whole porous. These ingredients should be mixed well together. See that the pots are thoroughly cleansed before they are used. Drain them well with pieces of broken pots, charcoal, or clinkers, rather than with ground-bones. If the weather is dull for a few days after the potting has been done, the plants will have a good chance of getting established quickly, otherwise shading from the sun's rays will be necessary. This can be done by placing them under the shade of a wall or hedge for a few days, when they may be removed to their summer quarters.

Herbaceous Calceolarias.—Sow seeds to produce a batch of plants that will flower early next spring. The seeds should be sown in rotten leaf soil which has been passed through a fine-meshed sieve, and an equal quantity of silver-sand mixed together. Fill a pan to within 2 inches of the rim with suitable drainage material, on which place some coarse leaf-mould and the compost described above on the top of this, filling the pan to the brim, then press firmly down with a piece of flat wood and sow the seeds thinly. Carefully press them gently into the soil, but add no fresh soil. Place the pans underneath a hand-light near to a wall, where the sun's rays cannot reach them. The compost should be sufficiently moist when used that water will not be necessary until the seeds have germinated.

Humea elegans.—For raising early plants sow seeds now in old potting soil in a warm temperature.

General Remarks.—Give attention to cuttings of various plants as they are removed from the propagating-frame, separating and potting those that are two or more in a pot before they become too thickly rooted.

THE APIARY.

By Chloris.

Ants.—Some of my friends say that this season the honey is being consumed by ants as fast as the bees bring it in. This, I am convinced, is an error. The bees require a great deal of honey to raise brood, and the honey flow little more than meets this want. The true cause, in my estimation, of ants seeking a home in hives is the warmth of the cluster, and it will be found when the bees become strong they will turn the lodgers out. This is always supposing the bees to be stronger than the colony of ants. I have known cases where the ants have been in the ascendant and the bees themselves have been compelled to turn out.

Method of Destroying Ants and their Nests.—Take a stout stake and make a fairly large hole into the nest, then pour in kerosene oil. If the nest be on a lawn, be careful not to spill any on the grass or it will destroy it. This done, plug up the hole with anything handy, or take a kettle of boiling water and pour the contents down the hole. When you have ridded the hives of the pest, place the feet of the stands in saucers filled with water, or better still, oil. Another method is to run a trail of oil (kerosene) round the hives, and this will act as a barrier.

AMERICAN NUT JOURNAL. — Among the numerous trade journals that we receive from the other side of the Atlantic is one which is devoted exclusively to the interest connected with the cultivation of Nuts—Chestnuts, Pea-nuts, Peccan-nuts, Butter-nuts (Juglans cinerea), Brazil-nuts, Pistachio-nuts, and others. It is published every month at Petersburg, Virginia.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER, 41, Wellington Street, Covent Garden, W.C.**

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Letters for Publication, *as well as specimens and plants for naming, should be addressed to the* **EDITOR, 41, Wellington Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editor will be glad to receive and to select photographs or drawings, suitable for reproduction, of gardens, or of remarkable plants, flowers, trees, &c.; but he cannot be responsible for loss or injury.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, JUNE 20 { Royal Horticultural Society's Committees meet. National Rose Society's Committee meet.

WEDNESDAY, JUNE 21—Yorkshire Gala, York (3 days).

FRIDAY, JUNE 23 { Royal Botanic Society, Lecture, and Meeting at 4 P.M.

SALES FOR THE WEEK.

TUESDAY NEXT—
Sale of the whole of the Established Orchids in variety, at Park Hill, Kenilworth, by Protheroe & Morris, at 12.30.

WEDNESDAY NEXT—
Palms, Plants, Ferns, Begonias, &c., at 67 and 68, Cheapside, E.C., by Protheroe & Morris.

FRIDAY NEXT—
Cattleya Schröderæ, Odontoglossum crispum, from Messrs. Sander & Sons, and others, at 67 and 68, Cheapside, E.C., by Protheroe & Morris, at 12.30.

(For further particulars see our Advertisement columns.)

AVERAGE TEMPERATURE for the ensuing week, deduced from observations of Forty-three Years at Chiswick—61·6°.

ACTUAL TEMPERATURES:—

LONDON.—*Wednesday, June* 14 (6 P.M.): Max. 70°; Min. 55°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 15 (10 A.M.): Bar., 29·8; Temp., 69°. *Weather*—Bright sunshine.

PROVINCES.—*Wednesday, June* 14 (6 P.M.): Max. 60°, Norwich; Min. 57°, N.E. Scotland.

British Gardeners' Association.

THE British Gardeners' Association is just one year old. The isolation of gardeners, their lack of cohesion, the absence of co-operation among them, their "want of faith," have been noted and deplored for many a long year. Those who know the facts have been and are surprised that the social position and remuneration of gardeners (we are not speaking of exceptional cases) are by no means adequate to the lengthened training, the forethought and intelligence required of them. The position accorded to the gardener is not adequate when compared with that meted out to some of his fellow-servants from whom less is expected, or as compared with that accorded to the superior artizan. Head gardeners who have risen to high positions do not always sufficiently recognise the laudable aspirations of those in the ranks, and do not do all they might to encourage young men in their desire to better their condition. Individual character and self-help are, of course, the most important factors, but a helping hand at certain stages of a man's career is almost equally important. This helping hand the Association is devised to supply. In some quarters disappointment is expressed at the fact that on May 25 the members of the Association only numbered six hundred and thirty-two, a very small proportion of the gardeners of the country. For our own part, bearing in mind the great difficulties incurred in rousing gardeners to a sense of their responsibilities in this matter, and in getting them to co-operate, the adhesion of over six hundred members in the first year is by no means unsatisfactory. An association of this character cannot leap into position all at once. It must grow, evolve, adapt itself to circumstances. Prudence, caution, and a due regard for the opinions of honest objectors must characterise its management. Given these, the objects of the Association are so well calculated to benefit the profession that we can but look forward with confidence and hope.

The objects of the Association are to facilitate the selection of the competent and the honest and to "rogue" or at least to ignore those who are not worthy of the name of gardeners. Employers at the present time, when they cannot avail themselves of the personal experience of trustworthy friends, have to depend on the recommendations of the trade, or the hazardous experiment of the advertising columns. Head gardeners have no formal guarantee that the candidate for an appointment possesses the qualifications which he ought to have to fulfil the duties of his office. Such a guarantee the Association will, when it gets into working order, be able to offer. Some, mindful of the tyranny which has been occasionally associated with trade-unionism, and detesting the infringement of the liberty of the individual that sometimes fetters the best men and forces them to remain in a position of mediocrity, have failed to give in their adhesion to this Association. But it is not the bad features of an evil system of trade-unionism that the Association desires to copy, but that helpful co-operation which, whilst encouraging and developing the self-respect of its individual members, secures the recognition of the rights of others.

CYMBIDIUM RHODOCHEILUM (see Supplementary Illustration).—This fine species was introduced by M. G. WARPUR, a Belgian collector, in 1900, and first flowered in The Royal Gardens, Kew. It was doubted whether the plant would be amenable to cultivation, but the fact that it has been successfully grown was proved by the specimen exhibited by J. BRADSHAW, Esq., The Grange, Southgate, at the Royal Horticultural Society's meeting on May 10 last. A First-class Certificate was unanimously voted for the specimen, which was greatly admired on account of its stately habit and distinct colour. The sepals and petals are yellowish-green, but the petals are spotted with dark purple, the front and sides of the labellum being of bright rosy-red colour. It requires to be grown in a warm-house, and should be afforded an abundance of moisture and shade during the summer. We are indebted for our illustration to Messrs. W. BULL & SONS, Chelsea.

THE ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Committees will be held in the Society's Exhibition Hall, Vincent Square, on Tuesday, June 20, when a lecture will also be delivered by the Rev. Professor HENSLOW, V.M.H., on "The Plants of the Bible," which will be illustrated by lantern-slides.

—— We are reminded by the Secretary that the Society's Summer Show, which for the last few years has been held at Holland Park, will this year be held in the grounds of the Royal Military Hospital, Chelsea, on Tuesday, Wednesday, and Thursday, July 11, 12, and 13, the arrangements for which will be similar in all respects to those in force at the Society's shows at the Temple. The Chelsea site is ten minutes' walk from Victoria Station, and less than five minutes from Grosvenor Road and Sloane Square. Omnibuses run along the sides of the estate from all parts, including Liverpool Street, Clapham Junction, Walham Green, Shepherd's Bush, Holloway, and other outlying parts of the metropolis. Copies of the schedule may be obtained on application to the Secretary, Royal Horticultural Society, Vincent Square, S.W.

FLOWERS IN SEASON.—To Mr. LINDSAY, of Murrayfield, Midlothian, we are indebted for flowers of Veronica Hulkeana, a New Zealand shrub with oblong-obtuse, crenate leaves about ¾ inch long, tapering at the base into a short stalk, and bearing much-branched, elongated, pyramidal clusters of pale lilac flowers. A variety, also sent, has denser, less-spreading clusters, and somewhat darker flowers. V. Fairfieldi × has much shorter flower-clusters, and is considered to be a hybrid between V. Hulkeana and V. Fairfieldi. Pentstemon Menziesii, with small (¼ inch long), somewhat fleshy, oblong leaves tapering at both ends and slightly toothed at the margins, bears its numerous glowing crimson flowers in clusters at the ends of the branches. Each flower is about ¾ inch long." Growing in a mass the effect must be magnificent.

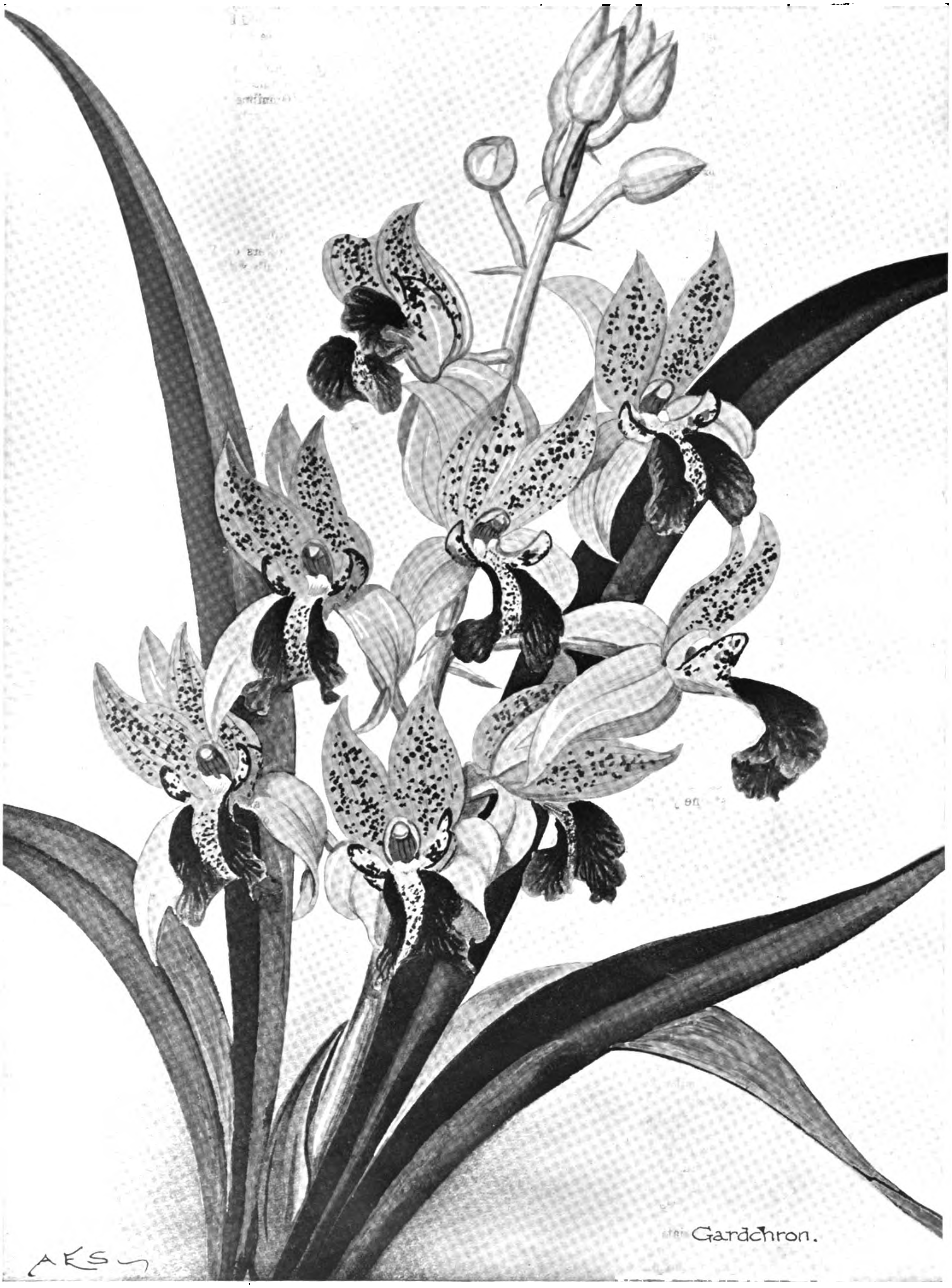
HORTICULTURAL CLUB.—Mr. D. B. CRANE will read a paper, on the 20th inst., on the "Beauty of the later Developments of the Pansy, and Dr. STUART'S work in hybridising the Violas to produce garden flowers for massing." The paper will be illustrated with flowers of the principal varieties.

RHODODENDRONS AT THE ROYAL BOTANIC GARDENS, REGENT'S PARK, N.W.—Messrs. JOHN WATERER & SONS, Ltd., Bagshot, Surrey, opened their annual exhibition of Rhododendrons on Thursday, June 8, and it will remain on view throughout the present month.

THE YORKSHIRE GALA.—The floral *fête* in connection with the York Gala will be held in Bootham Park, York, on Wednesday, Thursday, and Friday next, June 21, 22, and 23. Prizes to the amount of £700 will be awarded, and a good show is anticipated.

VIENNA CONGRESS.—The Botanical Congress in connection with the International Botanical Meeting in Vienna is taking place from June 11 to 18. Associated with the Congress, an exhibition has been organised in the Schönbrunner Orangerie. This includes a historical section, a collection of modern appliances for the assistance of research and instruction, and a horticultural section. The exhibition will remain open from June 11 to 25, but it is proposed to close the botanical division on the 18th of this month.

POTATOS.—The Honourable A. H. T. de Montmorency, of Carrickmines, Co. Dublin, exhibited some well-matured and large Potato tubers at the Temple Show, the varieties being Royal Kidney, Sir John Llewelyn, Snowdrop, and his own variety, The Scout. They were grown, we are informed, in a house built specially for Potato-culture, in which there is no bottom-heat either from the employment of hot-water or manures, and only sufficient surface artificial heat is used to ward off frost. As it is by the heat of the sun they are brought to maturity, the roof having a certain pitch which collects all the heat and light, they are quite like Potatos grown in the open, and have no appearance of having been forced. He also secured the award of Cultural Commendation on December 14, 1904, for a dish of new Potatos grown from some tubers that he exhibited at the Temple Show in the previous May.



Cymbidium rhodocheilum, a species from Madagascar, having flowers of yellowish-green, with brilliant red-coloured lip.

Bradbury, Agnew & Co., Ld., Printers, London and Tonbridge.

THE GARDEN CITY. — The Garden City, which is gradually rising at Letchworth, within an hour's journey of King's Cross, was seen on the 31st ult. in an interesting stage of development by members of the Worshipful Company of Gardeners, by whom it was visited. Already about a thousand persons are settled on the estate, which covers 3,800 acres; and in course of erection for a prize exhibition next month are eighty or ninety cheap cottages. Amongst builders not only in the district, but also in various parts of the country, great interest is being taken in this cheap cottage exhibition, for prizes of the total value of £600 or £700 are being offered for the five that are adjudged the best. The whole principle of the scheme is to get manufacturers and others there with their workpeople. In order to attain this end, the rents of the cottages have been fixed as low as 5s. a week, ample accommodation being provided on the most approved plans. It will be gathered from what has been detailed that considerable progress has been made with the city during the eighteen months that the Company has had possession of the estate. Exceedingly useful work has also been done in providing employment and accommodation under the auspices of the Mansion House Committee for 300 of the unemployed. The last of these men left the estate about a week ago, and the buildings which they occupied will be brought into use as administrative offices for the Cheap Cottages Exhibition. A pleasant feature of the proceedings during the afternoon was the naming, by Mr. OSMAN, Deputy-Master of the Gardeners' Company, of an open space to be used as a park, and known as Howard Park, in honour of the founder of the city. When asked what the visitors thought of the city, Mr. OSMAN said they were extremely pleased with it. He specially noted the fact that the houses and cottages were substantially built, with good spaces between them, and he added that he thought the exceptionally low rents would make them very attractive. In any case he feels that the city is bound to succeed, and that it will return to those who are financially interested in it moderate dividends. In the evening the Directors of the Garden City Company were the guests of the Gardeners' Company at a dinner given in town. Mr. MERVYN E. MACARTNEY gave a lecture on "Garden Architecture," illustrated by lantern-slides.

A NEW ALPINE FLORA.—We note the appearance of *Alpenflora*, die verbreitetsten Alpenpflanzen von Bayern, Tyrol und der Schweiz, by Dr. GUSTAV HEGI, Privatdozent und Kustos am k. Botan-Garten, Munich, and Dr. GUSTAV DUNZINGER, also of Munich. The book contains brief descriptive letterpress of the chief species and varieties of alpine plants, and a great number of coloured plates. It should prove useful to the many tourists who, in summer and early autumn, visit the mountainous districts mentioned. The publication issues from J. F. LEHMANN's Verlag, Munich.

TREES.—Messrs. HUTCHINSON & Co., Paternoster Row, will shortly publish the first number of an important new work on "British Trees," by Mr. REX VICAT COLE, to be completed in thirty fortnightly parts at 1s. net each. The author, who is a member of the Royal Society of British Artists, has made a long and careful study of his subject, and his notes have been modelled to their present literary form by Miss DOROTHY KEMP. The work will contain 250 drawings by the author, many of which are from his pictures that have been exhibited at the Royal Academy and elsewhere. Besides the general edition there will be a limited issue at twice the price.

THE BIOLOGY OF MELAMPYRUM. — M. L. GAUTIER contributes to the *Comptes Rendus* for May 22 a paper on the biology of Melampyrum pratense (yellow Rattle). This plant is remarkable as being semi-parasitic. The causes that determine its habitat have long been imperfectly known. Melampyrum shows a special preference for the terminal ramifications of the roots of Beeches. A mass of fungus mycelium is frequently attached to the roots, and to this also the parasite appears to attach itself. Melampyrum pratense, according to our author, is especially found in soils rich in humus, wherein it seems to seek for those fungoid growths which, according to FRANK, form the greater part of the humus of our forests, as in Fontainebleau, where the leaves fall abundantly, and the "mycorhiza" find it correspondingly easy to develop. The Beech, which is there abundant, has its roots infested by the mycelium filaments of the humus; the suckers of Melampyrum pratense attach themselves to these in preference to any other roots, and ally themselves intimately with the mycorhiza of the tree. If these "mycorhiza" are considered as taking a part in the nutrition of the plant it is not difficult to conceive that the Beech, better armed than neighbouring plants for the struggle for existence, turns the nutritive substances of the soil to its advantage, and that Melampyrum pratense has thus every inducement to fix its suckers into such a powerful absorbing apparatus. The abundant humus rich in hyphæ, the neighbourhood of the Beech or of another species to the mycorhiza as a consequence may therefore be considered as factors highly favourable to the parasitic habits of Melampyrum pratense, and as justifying its selection of its habitat.

CULTIVATION OF AZALEAS IN DRESDEN.—Mr. P. J. SCHENK, in a recent issue of *Le Jardin*, describes the method of cultivating Azaleas as practised in Dresden, which is different from the plan usually adopted at Ghent. In Dresden, "Azaleas are often grafted on Rhododendron Cunninghami. At the end of July or the beginning of August the grafts are placed in a house where all the openings are closed with wood-shavings. The house is shaded by means of wide boards, which are also used to cover it at night. The air of the house is kept moist by frequent waterings. In addition to being grafted, the shoots of the Azalea plants which are cut off are struck as cuttings in low boxes placed under the stages on a heap of sawdust; this sawdust serves in winter to cover the great wooden houses called 'Japans,' where grafted plants two or more years old are planted on the stages. The ungrafted Azaleas are also propagated by cuttings at the same time as the cuttings which are to serve as stocks next year. All these cuttings are pricked out in the same low propagating frames when rooted, and are wintered in the same houses in which the Azaleas in pots are kept, and in the corridor which connects a whole series of low houses. They are planted then in spring in mixed compost in an open house called 'Grundkasten.' The plants do not leave this until the grafting time. The grafted plants in the houses are freed from the ligatures which join the grafts to the stocks as soon as new growth is evident. At the end of June, when the oldest plants are removed from the 'Japans' the grafts that are now about a year old take their places. They remain in the 'Japans" for about a year, then are planted in the 'Grundkasten' during the summer, and are replaced in the 'Japans' for the autumn. In the third year after grafting they are transplanted in the 'Grundkasten' for the last time, as Azaleas three years old are usually potted at the beginning of September, unless they are not strong enough or unless they are destined to make great bushes of several years' growth. The plants in pots winter in the temperate houses, and in summer are placed in full sun under simple wooden erections that are easily covered in bad weather and which afford shade when the sun is too powerful. It is here that Azaleas form their flower-buds. To encourage this they are sprinkled several times daily, and after July are given but little shade. In September the purchasers arrive, and the plants are sent out about the 15th of the month. The following are some of the differences between the Belgian and the Dresden plants:—The Ghent grower trains his plants so as to make fine, symmetrical heads; the Dresden grower prunes them to check over-vigorous growth and to favour the formation of flower-buds. Thus the latter obtains plants of loose and informal habit. The varieties of Azalea employed are the following: A. phœnicea, especially used for standards; A. concinna, only employed to form small plants, as it grows slowly at first and only vigorously after three or four years. This variety is certainly the best for grafting for wholesale purposes. The third Azalea preferred in Dresden is a hybrid called Hexe, raised by crossing A. amœna Forsteriana with A. hyb. Duc Adolphe of Nassau. Hexe is not merely used as a stock, but is also grown for final plants for trade purposes; it is apt to produce too many shoots on the stem, and consequently is more or less covered with knobs. The sorts chiefly cultivated in Dresden and the neighbourhood are Deutsche Perle, Talisman, Apollo, Simon Mardner, Sigismond Rucker, Emma, Président Comte Oswald de Kerchove, Hélène Theleman, Professeur Wolters, Vervæneana, Eggebrechtii, Impératrice des Indes, Frau Hermann Seidel, Madame Van den Cruyssen, Niobe, and Sakuntala."

"TREES AND SHRUBS."—The fourth part of this valuable publication, edited by Professor C. S. SARGENT, has been issued. It consists of illustrations and descriptions of new or little-known ligneous plants, prepared chiefly from the collections in the Arnold Arboretum. The plants figured in the present number include numerous Maples, such as Acer truncatum, Oliverianum, sinense, Wilsoni, erianthum, flabellatum, caudatum, Davidii, urophyllum, tetramerum, barbinerve, and Francheti, thus including various species collected in China by HENRY, WILSON, and others. A conspectus of the East Asiatic species with differential characters is supplied by M. REHDER. Three species of Parthenocissus are mentioned — P. quinquefolia (better known as Ampelopsis hederacea), dumetorum, and Texana; three of Phellodendron—amurense, sachalinense, japonicum; two of Arctostaphylos—virgata and vestita; two of Pinus—Altamirani and Pringlei (both of Mexican origin); Malus Zumi, Dracæna americana from Guatemala, and Oroxylum flavum.

ANTS AS GARDENERS.—According to a recent number of *Nature*, the April issue of *Himmel und Erde* (Berlin) contains an illustrated popular account of the "flower-gardens" made by ants in the crowns of trees in Amazonia and Peru, as discovered and described by Mr. E. ULE. These "gardens," or perhaps we might rather say "baskets," are shown in various stages of growth, from the time when the plants are just budding until the long slender leaves of Streptocalyx angustifolius, which appears to be the favourite species, are fully developed. All the plants cultivated appear to have very minute seeds or spores, which seem to be sown by the ants in their nests.

"HOW TO USE NITRATE."—A pamphlet under this title has been issued by G. STREET & Co., 30, Cornhill. It contains a lecture by Dr. BERNARD DYER on the application of artificial manures, and a large number of valuable hints as to the application of this fertiliser. For hay crops a mixture of one part of nitrate of soda, two parts of superphosphate, and two parts of kainit, is recommended. For 1 acre the "parts" may be reckoned as so many hundredweights.

DICTIONNAIRE ICONOGRAPHIQUE DES ORCHIDÉES.—In the number for May, 1905, the following plants are figured:—Æonia polystachya, Bentham et Hooker; Epidendrum dichromum, Lindley; E. variegatum, Hooker; E. Lambeauanum, De Wildeman; Odontoglossum crispum var. Luciani, Hort.; Cypripedium Chamber-Leeanum, Rolfe; C. callosum-Charlesworthii, Hort.; C. Hera var. Gillianum, Rolfe; C. Orion Veitch; Dendrobium crassinode, B. et R.; D. chlorostele var. Juno, Hort.; Vanda cœrulescens var. Boxallii, Reichenbach; Megaclinium Fuerstenbergianum, De Wildeman. We note that a large Gold Medal was awarded to this publication by the International Jury at the late Paris Exhibition. This useful publication is illustrated and published by M. GOOSSENS, Avenue Walkiers, 68, Auderghem, Brussels.

EXPERIMENTS WITH FUNGOUS DISEASES.—Mr. ERNEST SALMON is continuing his cultural experiments with "Biologic Forms of the Erysiphaceæ." He had previously shown that it was possible to infect with the fungus leaves that under ordinary circumstances are immune.

"We see, then," says he, in a recent paper in the *Annals of Botany*, "from the results of experiments, that not only mechanical injuries, such as wounds from cuts, bruises, attacks by slugs, &c., but also injuries due to the action of narcotics and heat, cause a leaf to become susceptible to a 'biologic' form of a fungus to which it is normally immune. . . . It is obvious that mechanical injuries quite similar to those produced by cutting, bruising, &c., described in the experiments, are constantly being inflicted on plants in nature—by animals and by frost, hail, wind, &c. In the case of cereals the agricultural operation of rolling seedling plants causes a number of leaves to be torn or bruised. An experiment carried out during the last spring demonstrated that bruised places on leaves produced by rolling are rendered susceptible in the same way as those caused artificially by pressure in the experiments mentioned. At the beginning of last May he collected from a field of young Barley which had just been rolled a number of bruised leaves. The soil of the field was stony and 'steely,' and in the operation of rolling about 30 per cent. of the leaves had been bruised more or less severely. Ten of these injured Barley-leaves were placed in a Petri dish on damp blotting-paper, and each inoculated over the bruised cells with conidia taken from Wheat-leaves. On the fourth day several of the leaves bore at the inoculated place numerous small straggling mycelial patches, and on the seventh day these patches, in the case of four of the leaves, bore several little tufts of a few clustered conidiophores. A number of saprophytic fungi were now growing vigorously at the injured places, and stopping the further growth of the Oïdium. . . . In the hypothesis already advanced to account for the susceptibility shown by leaves injured by a cut or burn, it was assumed that in consequence of the vitality* of the leaf-cells being affected by the injury, either the protective enzymes or similar substances normally present are destroyed or become weakened, or the production of them by the protoplasm is interfered with in the cells in the neighbourhood of the injury. This hypothesis may still be advanced to account for the same susceptibility being shown when leaves are injured by the action of alcohol, ether, chloroform, or heat, since it is known that protoplasmic functions are temporarily inhibited by anæsthetization, and that a high temperature may partially or entirely inhibit the process of the secretion of an enzyme or ferment. Attention may be directed to the fact that these cases of the loss of immunity, brought about by causes which affect the vitality of the leaf, find their exact parallel in the recorded instances of induced susceptibity in animals to certain diseases caused by bacteria. The decrease of vitality caused by fatigue, action of drugs, abnormal food, or environment, has been proved to induce susceptibility to certain bacteria in the case of animals which are immune under normal circumstances.

1. Susceptibility can be induced not only by the various kinds of mechanical injury, but also by such interference with the normal functions of the cell as follows the application of anæsthetics and heat.

2. The conidia of the first generation produced on leaves of a strange host-plant previously subjected to the action of alcohol, ether, or heat, retain the power of infecting their original host, and do not acquire the power of infecting normal leaves of their temporary host."

MONMOUTHSHIRE EDUCATION COMMITTEE.—Mr. W. J. GRANT reports on the three months' work between January 23 and April 25. In addition to instruction in various branches of farming, horticultural lectures and demonstrations have been given at various places in the county. A course of twelve days' practical instruction in the management of hedges has been given, and also suggestions as to the improvement and extension of fruit crops. The rainfall for the first three months of the year was no less than 9·65 inches below the amount in the corresponding period of the previous year.

OVER-SEA SUPPLIES: MAY.—The Trade and Navigation Returns for the past month continue to show an upward movement. The value of the imports is placed at £46,832,967, as against £44,780,098 for the same period last year—or an increase of £2,052,869. The exports also show a large increase. The value for last month was £27,252,693, against £24,332,089 for the same period in 1904—an increase of £2,920,604. The value of those imports in which we are particularly concerned will be found summarised in the following table:—

IMPORTS: DESCRIPTION OF PRODUCE.	1904.	1905.	Difference.
	£	£	£
Class I. — Cereals. and other field crops — Wheat, Barley, Oats, &c.	5,601,333	5,712,141	+110,805
Class II.—All other food cultures — Tea, Coffee, Fruit. &c.	4,337,740	3,933,199	—404,541
Class III.—Used in manufactures — clothing, household goods, &c....	6,845,135	7,491,602	+649,467
Class IV. — Miscellaneous — including seeds, flowers, &c.	1,468,861	1,531,336	+62,475
Values of Produce...	18,253,072	18,671,278	+418,206

The value of the fresh flowers imported last month shows a decrease of some £384 as compared with May, 1904—£17,319 against £17,703.

Our fruit and vegetable imports table is as follows:—

IMPORTS—MAY.	1904.	1905.	Difference.
Fruits, raw—	£	£	£
Apples	160,442	152,899	—7,543
Apricots and Peaches	192	1,792	+1,600
Bananas	146,992	157,091	+10,099
Cherries	66,353	42,569	—23,784
Gooseberries	1,307	1,020	—287
Grapes	4,698	5,379	+681
Lemons...	35,539	31,648	—3,891
Nuts—Almonds ...	23,201	19,095	—4,106
Others used as fruit	32 538	45 742	+13,204
Oranges...	235,715	131,416	—104,299
Pears	3,318	4,461	+1,143
Strawberries	5,612	8,800	+3 188
Unenumerated ...	12,028	15,047	+3.019
Vegetables, raw—			
Onions ... ...bush.	134,869	110,963	—23,906
Potatos ... ... cwt.	364,209	299,129	—65,080
Tomatos ... "	115,589	99,247	—16,342
Unenumerated "	57,543	55,043	—2,500
Totals ...	1,400,145	1,181,341	—218,804

Since the issue of our last "Oversea" notes, the Cape fruit supply season has closed—1153 packages having to be added to the totals previously recorded. There is promise of an increased importation of Apples. The value of the dried fruit imported last month shows a decrease of £15,328 as compared with the figures for the same period last year—£9,949 as against £25,277; and here it is worth noting that the demand for the fruit is stated to be gradually contracting. Attention may be called to the not improbable increase in the acreage devoted to Potato-culture in this country consequent on the proposed substitution of Potato-spirit for petrol in the propulsion of motors.

"MY NEW ZEALAND GARDEN."—By a Suffolk Lady (London: Elliot Stock, 62, Paternoster Row, E.C.). The garden here described is certainly very different to the more or less formal plantations familiar in England. Shrubs and trees that are tender or but half-hardy in this country grow luxuriantly in New Zealand, and the "Lady's" garden is adorned with what are, in one sense, wild flowers. Written unconventionally and with no little humour, the book makes pleasant reading, and an apologetic preface disarms criticism even as to grammatical errors and mistakes in plant-names. The following extract is illustrative of the writer's general style:—"Among New Zealand Coniferæ, Dacrydium cupressinum (the Rimu or Red Pine) in its young state excels all the family in beauty. An irregular green fountain might roughly help to describe it. Its pendulous branches coming out from the central stem and falling all round, from the top to the ground, have rather that effect. These branches, which are about the thickness of thin rope, are covered with scales of a brilliant green; they are always looked upon as the handsomest forest trees, and although they are very pretty almost from their cradle, about 12 feet high is the prettiest size; and I believe they are rather stationary in growth at about that age, as if trying to prolong their most beautiful stage. The wood of the Rimu is very satisfactory, and is used almost exclusively for building in this locality." The careless writing may be partly excused by the good spirits with which the "Lady" sets about her tasks, be they literary or manual. She desires a beautiful garden, and obtains it by thought and labour; she wishes to describe it pleasingly, and succeeds in spite of digressions and of too rapid a pen. We can commend the full-page photographic illustrations, showing us various nooks and corners in the garden and their inhabitants. Amongst other things the "Lady" narrates an interview with the famous globe-trotter, Mr. BARR. There are incidental notes on New Zealand plants which increase our oft-expressed wonder why our colonial friends are so anxious to imitate European customs, when they have such beautiful flowers at their own back doors.

"ANOTHER HARDY GARDEN BOOK."—By HELENA RUTHERFURD, Ely (New York: The Macmillan Co. London: Macmillan & Co.). The title seems to suggest that this is in some way a sequel to the writer's former book, *A Woman's Hardy Garden*, though it sounds like an exclamation that still another addition should be made to the numerous volumes already penned on this subject. The pages before us claim to chronicle only the result of personal experiences in raising vegetables, fruits, and flowers, and is not intended as a dogmatic treatise. The many amateurs whose gardens are an ever-new delight to them will read their fellow-enthusiast's pages with much sympathy. "Go out into the country O ye flat-dwellers of the city," says she; "have a few rods, if no more, of your own ground about you, and till it and tend it; the flowers you raise will be sweeter and more beautiful to you than any displayed in florists' windows, and no vegetables that can be bought will compare in flavour with those you will raise yourself." From this encouraging beginning we are led on to share the writer's confidences concerning her various crops, and how she tended them and advises others to tend them. The whole is pleasant reading, with evidence of good spirits on every page. We must not forget to praise the pretty but not flattering photographic illustrations of special flowers and of groups of them, and of nooks taken in the author's garden by Professor C. F. Chandler. They might well, most of them, be illustrations made in an English garden, though really representing scenes at Meadowburn Farm, on the further side of the Atlantic. With few exceptions the gardening hints are quite applicable in England also.

---

* Until our knowledge of the physiology of the cell has progressed further, it is necessary to use the general term vitality to express the sum of the individual physiological processes at work in the cell. External factors which affect the normal balance in the working of the individual physiological processes increase or decrease the vitality of the plant.

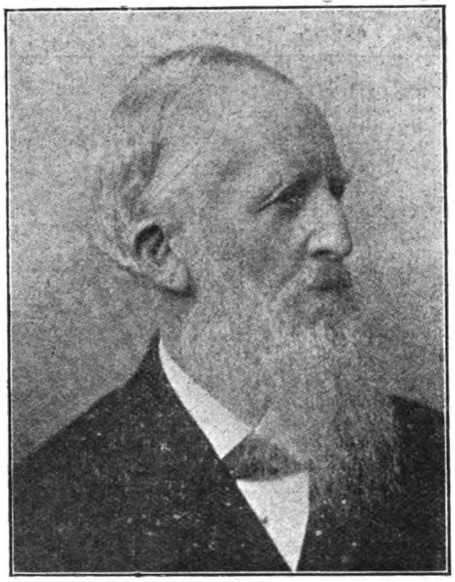
Death through the Fall of a Branch in Kensington Gardens.—The death of a young lady last week, caused by the fall of a large decayed branch from a tree in Kensington Gardens, should afford a lesson to those critics who are ever ready to complain when the authorities charged with the responsibility of keeping public parks or forests, have reason to prune or fell aged trees. It is most necessary in places to which the public have access that trees of large size, and particularly Elm-trees, should be examined frequently, and that measures should be taken to ensure safety for those who may walk beneath them. Even when all possible care is taken, as it is in the London parks, accidents cannot altogether be avoided.

Investigation of Plant Diseases in Germany.—The Department of Plant Diseases of the German Agricultural Society has recently been transferred to an Imperial Institute. In 1889, at the instigation of Professor Kühn, of Halle, the German Agricultural Society resolved to form a section which would be concerned with the investigation of the diseases and insects that attack crops. By the summer of 1891 the section had established communication with twenty-one local stations distributed throughout Germany. These consisted, for the most part, of the State experimental stations, though some were of a private character. The work of investigation and the distribution of information was carried out without any subvention from the Society. The first Report was issued in 1893, and a volume has appeared annually since that year. The first Report contained 106 notices of attack, whereas the number in the twelfth Report was 3,904. At the present time some forty local stations are affiliated with the central Society. A book entitled *The Protection of Crops against Diseases and Insects* was issued free to members of the Society in 1892, and 22,000 copies have been distributed. The work, having somewhat outgrown the resources of the Society, has now been taken over by the Biological Department of the Imperial Board of Public Health, and considerable extension is contemplated. The various States of the Empire have been approached by the Imperial Home Office with a view of securing the support of their research stations, and cordial co-operation has been promised. A central institute, fully staffed and equipped, will be established in each State, Province, or group of Provinces, and each central institute will have subsidiary institutes or stations affiliated with it. The latter will consist largely of local colleges, agricultural schools, experimental stations, and the like. Finally, each of these subsidiary stations will be associated with local collectors, chiefly farmers, gardeners, and foresters, of whom it is proposed to appoint about 1,000 for the Empire. The information supplied by the collectors will, in the first instance, be transmitted to the subsidiary institutes, from which it will be passed on to the central institutes, to be finally issued in an Annual Report to the Board of Public Health. Applications for advice will for the most part be dealt with by the subsidiary institutes, only the more difficult problems being investigated by the central institutes. *Cited from the Journal of the Board of Agriculture.*

Catalpa.—Professor Sargent, in 1889, published an account of a hybrid Catalpa known as C. "J. C. Teas," and supposed to have originated from a cross between C. Kæmpferi and either C. speciosa or C. bignonioides. Latterly Professor Penhallow has studied the anatomy of the wood in this and other species, and has published an account of them in the *American Naturalist* for March, 1905. We cannot enter into the details, important as they are, but they show that C. speciosa is not one of the parents, but that C. "J. C. Teas" is the result of a cross between C. Kæmpferi and C. bignonioides, as suggested by Sargent. The dominant characters of the hybrid as expressed in the anatomical structure are those of the Japanese parent.

MR. J. MEDLEY WOOD.

Mr. J. Medley Wood, the Director of the Botanic Gardens, Durban, is one of our oldest correspondents and the leading authority on Natal plants. He has lately celebrated his golden wedding, and we should like to associate ourselves with his fellow-countrymen in thanking him for all he has done for the botany of Natal and in congratulating him on this most interesting occasion.



J. MEDLEY WOOD,
Director of the Botanic Gardens, Durban.

THE ROSARY.

ROSE DOROTHY PERKINS.

This new R. Wichuriana hybrid was beautifully shown by Messrs. Cannell & Sons at the Horticultural Hall, Vincent Square, S.W., on May 9 last, the three plants staged being literally crowded with tender, rosy-salmon-coloured blossoms.

The proper season for flowering is June and July and onwards in minor degree until the month of September. The plant is a strong grower, and even in pots, as observed on this occasion, the growth was robust, so that it is a capital variety that may be employed for forming pyramids and weeping examples, or as a hedge, a wall covering, or a pillar plant. The flowers are semi-double and fragrant. *F. M.*

Rambler Roses.

Some Roses of this class, new in commerce, were noted at a recent meeting of the Royal Horticultural Society. Notably were Anna Rübsanien, having semi-double pale-pink blossoms; Ernest Grandpierre, with double white blossoms, and central petals of primrose tint; Non Plus Ultra, of a deep bright-purple colour; Waltham Bride, a hybrid variety having white blossoms; Wedding Bells, an almost single-flowered Rose of a pink colour; and Tannusblümchen, a blossom of a deep pink tint. All of these appear to possess features which make them desirable acquisitions to the Rose-garden proper, or for forming pyramids, pillars, and fences in the flower-garden and pleasure-garden. As forced plants in cold conservatories, worked high on tall Dog-rose stocks so as to show up above other subjects, especially Camellias out of bloom, Orange-trees, and New Holland plants, to which Roses appear in pleasing contrast, they may be greatly recommended. Some possess fragrance, and all are very floriferous. I do not consider their beauty to be enhanced by close training, rather the reverse. *F. M.*

Étoile de France.

This new Hybrid Tea Rose, which was distributed last autumn by J. Pernet-Ducher, of Lyons, promises to be a valuable variety. The colour of the flowers is crimson with a darker centre, being just what is required in this class. The habit of the plants is vigorous and the foliage good. I have not seen many aphis on our solitary plant. The flowers, which are just opening, are of the much-desired pointed form, and of good substance. I think the variety will make a good Rose for market-growers; the buds come singly, and the shoots have very few thorns. *Chas. Page, Dropmore Gardens, Bucks, June* 6.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM PURPURASCENS.

The two plants of this fine Odontoglossum included in the special sale of rare Orchids at Messrs. Protheroe & Morris's Rooms on Thursday, June 1, "by direction of Sir Trevor Lawrence, Bart., V.M.H., K.C.V.O., for the benefit of a charity," realised 150 gs. and 120 gs. respectively. The charity will thus be benefited substantially by the liberality of the donor, and by the appreciation of good Odontoglossums by his fellow-orchidists.

The sale throughout was very successful, although the extremely high figures attained at the previous Tuesday's sale were not reached, a good number of Odontoglossums ranged from 50 gs. to 100 gs., and some over, and the Cypripediums fully sustained their values. *J. O'B.*

Cypripedium barbatum.

There is no Cypripedium that flowers more profusely than C. barbatum, and for supplying flowers for cutting it is second only to C. insigne. I have recently cut over 230 flowers from twenty plants growing in 7 and 9-inch pots. The flowers last so well when cut, that one is apt to get tired of them before they fade; but this monotony can be avoided to a certain extent by varying the mode of arranging them in the glasses every few days. Though rather sombre in colour they never look commonplace. The plants can be grown very easily in the intermediate-house. They require considerable water at all seasons as they are never at rest. Repotting should not be done except when the plant becomes too large for the pot. *W. W., N. B.*

LAW NOTE.

A meeting of the creditors of Thomas Horsman, seedsman and nurseryman, of Bradford and Ilkley, was held at the office of the Bradford Official Receiver (Mr. C. L. Atkinson) on June 7. According to the statement of affairs, it appeared that the bankrupt had been in business for thirty-one years on his own account. The liabilities expected to rank were £2,113, and the assets were estimated to produce £388, leaving a deficiency of £1,725. The bankrupt made no offer to his creditors, and Mr. Edgar A. Mitchell, accountant, was appointed trustee, with a committee of inspection.

LEAVES FROM MY CHINESE NOTE-BOOK.

(*Continued from p. 357.*)

THE HOME OF THE CHINESE PRIMULA.

[*The history of the introduction, and subsequent discovery of the habitat of this favourite garden plant were described and illustrated in these columns, see "Gardeners' Chronicle," January 2, 1892, p. 13, and the issue for April 26, 1902, pp. 269, 270, and 271.* ED.]

THE distribution of the plant is remarkably local. The length of the Ichang gorge is roughly 15 miles. The cliffs are of limestone, and exceedingly precipitous. It is on the tiny ledges and niches on the face of these vertical cliffs that the plant is at home. The accompanying illustrations (figs. 163, 164) show the habitat fairly well, but unfortunately they do not show the height of the cliffs, which are often several hundred feet sheer. But though the plant occurs sparingly throughout the length of the gorge, it is only at the entrance nearest to Ichang, and more especially in the lovely San-yu-Tung glen, that it is really abundant. Outside this gorge and the glens which pierce it, I only met with it in one other locality, and on similar limestone cliffs one day's journey north of Ichang. The plants grow fully exposed to the sun, and without a drop of water for months together. They evidently live on the accumulated humus chiefly derived from their own decaying leaves. One wonders at the plant existing, much less thriving, under such arid conditions.

In January, February, and early March, the face of these cliffs is dotted all over with thousands of plants—one mass of delicate mauve-pink flowers, and the fragrance is delicious.

The plants vary from 3 to 9 inches in height, according to situation. The leaves are very small. The scapes have often two or more whorls of flowers. I have counted as many as twenty scapes to one plant with over a hundred flowers open at the same time! The flowers often measure 1½ to 1¾ inch in diameter, which rather astonished me. The colour is a pleasing soft mauve-pink with pale yellow eye. In the shade the colour is a little lighter, but I never succeeded in finding an albino. Considering how the colour has varied under cultivation one is rather surprised to find the "shade" so constant in the wild plant.

The petals are deeply emarginate, and the flowers are, of course, heterostyled. In company with many other cliff plants, the peduncles and pedicels after flowering become "positively geotropic." This insures the safe depositing of the seeds in the niches and ledges of the cliff.

It is interesting to compare the long-cultivated plant with the typical spontaneous one. The new class of Primula, called "stellata," I think, is very near the typical form. I know nothing of the origin of this "class," but if a product of cultivation derived from the long-cultivated plant, it constitutes a remarkable "throw-back." Perhaps it is the result of cultivating the spontaneous plant from seeds, and if so, there nothing remarkable about it. If my memory serves me rightly the Kew plants were lost after flowering.

In colour, size, shape and substance the florists' flower has diverged widely from the type. In the "fern-leaved" forms we find a remarkable deviation from the typical leaf. In short the only thing that has remained constant is the perfume. But what has been gained in size and colour has been lost in grace and beauty. The spontaneous plant is, to my mind, far more graceful and beautiful than the florists' flowers growers have striven so hard to produce.

As I wrote this my view was of a white cliff nearly 200 feet high, where thousands of plants one mass of flower were revelling in warm sunshine. It was a picture to make the heart glad, and it is a great pity all lovers of this favourite flower cannot enjoy such a sight.

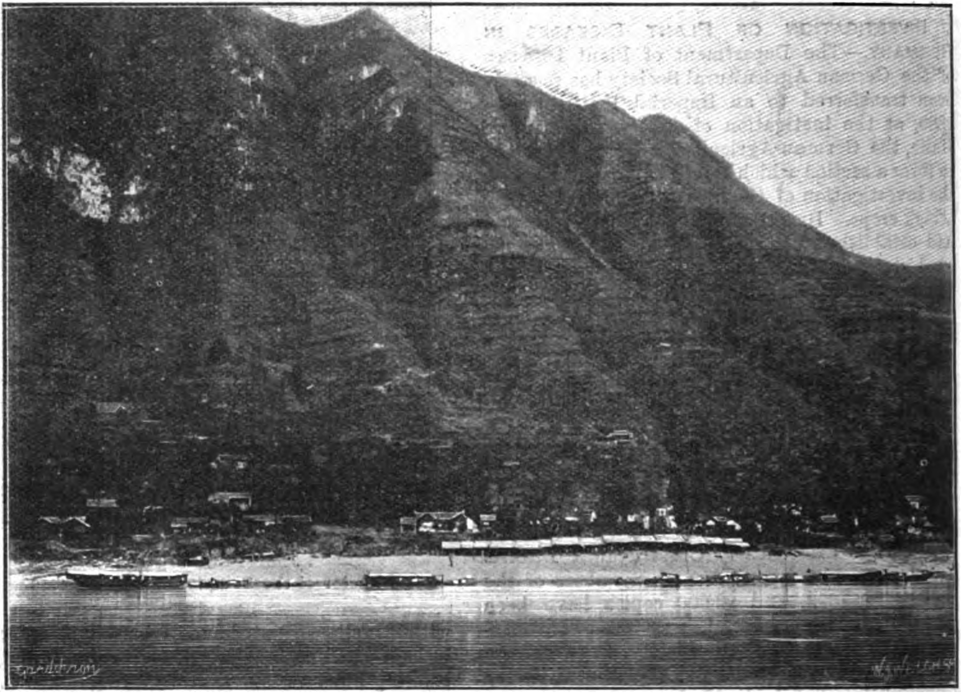


FIG. 163.—PING-SHAN-PAI, WHERE THE CHINESE PRIMULA GROWS WILD.

ICHANG TO KIATING.

April 25, 1903.—We left Ichang last night, crossed the river, and tied up for the night at An-an-Miao, a village opposite the upper end of Ichang city. At 5 A.M. this morning, with much noise, we unmoored and commenced our journey of 800 miles.

With a strong fair wind to aid us we made good progress. At 7 A.M. we were off San-yu-Tung and entered the Ichang gorge, last of the stupendous chasms the mighty Yang-tsze has cleft for itself. In these gorges the river is reduced to half its usual breadth, and the water is in consequence very deep. In their soundings the two British gun-boats, on their first ascent to Chungking, found over sixty fathoms of water off San-yu-Tung. This at low-water season! In summer the water in the gorges is often 80 to 100 feet above its winter-level. At such times all traffic through the gorges is suspended.

This gorge is about 15 miles long. The cliffs are of limestone, turreted and castellated, culminating in grotesque forms and shapes. Though the cliffs of this gorge are not so precipitous as they are in the others, the scenery is not one whit the less grand and awe-inspiring. All the gorges afford such wild and wondrous scenery that neither pen, pencil, brush, nor camera can adequately portray it, and it is very much a matter of opinion as to which is finest. I shall ever remember my first view of the Ichang gorge. It was after a heavy fall of snow. The day was dull but clear, and the cliffs, covered with snow, stood out in solemn grandeur. To-day the cliffs are alive with lovely flowers, shrubs, and herbs in the wildest profusion. Truly a sight for the gods!

As we sailed rapidly through this wondrous scene I stood on the deck of the boat lost in admiration of the things around me. Flowers of every hue met the eyes and gladdened the heart—a grassy bank one mass of the lovely Primula obconica; a cliff, in every niche of which nestled Corydalis thalictrifolia, with its erect racemes of yellow flowers; a waterfall, beneath which hundreds of Iris japonica luxuriated; the rocks, drenched in spray, were green with Adiantum Capillus-Veneris var.; the crags themselves alive with masses of Cæsalpinia sepiaria, Rosa moschata, Spiræa dasyantha, Wistaria sinensis, Polygala Mariesii, and other such favourites. And so we journeyed on, every hundred yards revealing some fresh aspect.

At 10 A.M. we reached the Customs' barrier at Ping-shan-Pa, a tiny village romantically situated in the heart of the gorge. Our papers having been duly examined and initialed we proceeded. About a mile above this picturesque village the river takes a right-angled turn. At this bend, and near the middle of the river, is a large and dangerous rock, designated "Sleeping Pig." Rounding this difficulty, we soon come in view of the "Needle of Heaven," an isolated pillar-shaped peak of limestone, perhaps a thousand feet high. At 1 o'clock we were opposite to the lovely village of Nanto, nestling amidst orange-groves, with a huge precipice culminating in curiously-fringed overhanging peaks on the opposite bank. We were now clear of the gorge, and the river in front was strewn with boulders. Looking back I noted that a temple crowned the highest peak visible. This is Ching-kan-Shan, "Diamond Hill," alt. 2,800 feet.

At 4 P.M. we moored for the night at Wang-ling Miao, 30 miles above Ichang. This is a small village on the right bank, possessing a fine temple, and is a noted mart for Bamboo ropes. These ropes are made from the split culms of Phyllostachys mitis, plaited, and soaked in lime-water. These ropes possess enormous strength, and are used for pulling the boats up-river.

In many places during the day the currents were very strong, and in the gorge we crossed many dangerous-looking eddies. Just below our mooring we crossed the first rapid—a small affair called Chin-shui-Tan, "Clear Water Rapid." One of the chief floral features of the day was Aleurites cordata. This plant is highly valued for the oil which is expressed from its seeds. The oil is known as "Wood-oil," and is an important article of commerce, its principal use being varnish for boats. In the *Index Floræ*

Sinensis, vol. ii., p. 433, a footnote states that the oil is sometimes known as "Ningpo Varnish." This is a mistake. The tree itself averages 10 to 15 feet in height, flat-headed, with large cordate leaves, and unisexual flowers, white with brown striæ. It thrives in rocky places, and is particularly abundant in these parts.

During the day I noted some eighty-four distinct species of plants belonging to seventy genera. They were made up as follows:—19 species of shrubs, 13 species of trees, 44 species of herbs, and 8 of Ferns. Out of the 44 species of herbs 29 may be designated "weeds of cultivation" in the broad sense of the term. Out of the 84 species no fewer than 21 are valued in England from a horticultural standpoint. Apart from those already mentioned the following made the gayest display:—

Daphne Genkwa, Linum trigynum, Sophora viciifolia, Azalea indica, Loropetalum chinense, Symplocos cratægoides, Paulownia imperialis, Rosa lævigata, Deutzia discolor, Rehmannia rupestris, Mazus pulchellus, and Rosa Banksiæ.

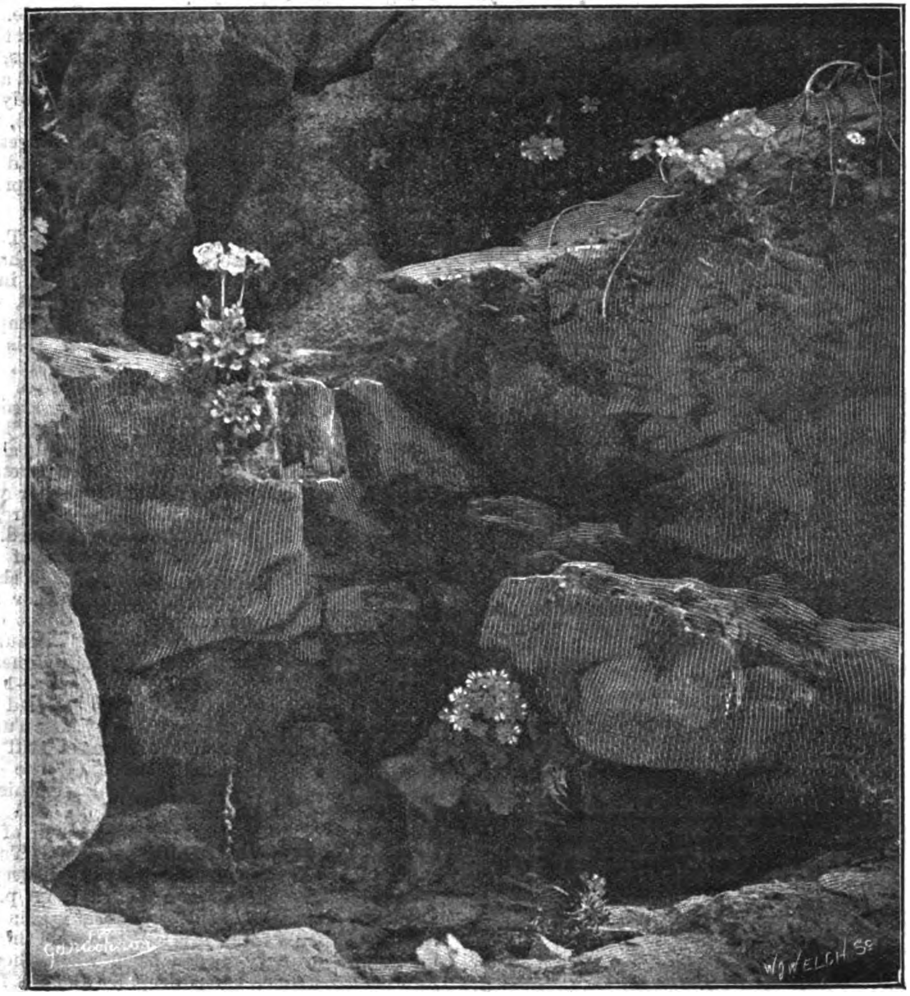


FIG. 164.—PRIMULA SINENSIS AT HOME.

On the cliffs hereabout a peculiar kind of chamois is common, and so also is a species of muntjac. The former haunt the inaccessible limestone cliffs; the latter the more open but rocky ground.

April 26.—The barometer fell during the night, and rain fell heavily at 9 A.M.; forcing us to tie up. We restarted at 1.30 P.M., and by 2.30, with the aid of thirty extra trackers, we got safely over the Tatung, last of the major rapids of the Yang-tsze.

It continued to rain more or less the whole of the day, but the crew worked till 5.30 P.M. We moored for the night a short distance below the Tung-ling rapid.

From Nanto to here the Chinese call the river Ta-cha-Ho—"River of Dregs." This is a most appropriate name, since for the whole distance the banks are strewn and the stream impeded with enormous boulders—granite chiefly. In the high-water season this is one of the worst reaches on the river.

The country hereabouts opens out considerably, and is largely under cultivation; Peas, Beans (broad), Vetches, Barley, and Opium are the principal crops. The people seem strangely indifferent in regard to the Barley crop. If the season is late and the ground required for Rice or Cotton, they plough-in the Barley as manure.

I noticed much less Opium cultivated hereabouts than formerly. This, I gather, is due to the heavy tax imposed on the growers. The tax was first instituted in 1902, and amounts to 64·00 taels per picul of crude Opium. The result is seen in the almost total absence of this crop from places where formerly it was largely grown. (This tax threatened to ruin the culture of this crop, and has since been repealed.)

Innumerable groves of Bamboo were the feature of the day. The higher hills were clad with Pine and Scrub Oak, Liquidambar formosana is a very common tree to-day. Rain and the nature of the country combined did not admit of much botanising. I merely noted a few weeds of cultivation, Styrax japonicum (small bushes), Rosa indica (planted on a tomb), and Cedrela sinensis, the shoots of which are eaten.

At the Tatung rapid the legumes of Gymnocladus chinensis were for sale. These pods are about 4 or 5 inches in length, thick, and dark-brown in colour. They are used as soap in many parts of the Yang-tsze Valley.

April 27. — We started soon after 6 A.M. and reached the Tung-ling rapid at 7 A.M. At dead low-water a broken reef of rock stretching right across the river makes this an extremely difficult and dangerous place. A huge rock divides the channel of the river and stands sentinel at the gate of the Niu-kan gorge. It was on the above-mentioned reef that, in December, 1900, the ill-fated German steamer struck on her maiden voyage and sank in twenty minutes. She still lies at the bottom of the river, and is likely to remain there.

Opposite the village of Tung-ling and on the south bank are two or three coal adits. The output is small and the quality very inferior. Having crossed this dreaded rapid in safety we entered the Niu-kan or Lukan gorge. The Ox-liver gorge, for such is the meaning of the Chinese name, obtains this appellation from a projecting mass of limestone which bears a fanciful resemblance to that anatomical organ. This gorge appeals to one as one of the wildest of all. It is only about 5 miles long. The cliffs are for the most part sheer, and often 2,000 feet high. In one or two places the upper parts are well-wooded. Chionanthus retusus is common on the cliffs. This plant, well-known but little cultivated, is one of the handsomest of all flowering trees or shrubs. Here it forms bushes 4 to 8 feet in height, and is nothing but a mass of flower. Given a rocky and very sunny place it ought to thrive in England much better than it does.

The first of the three rapids, called Hsin Tan, was reached at 10.15 A.M., and we were over at 10.45 A.M., when a heavy downpour brought matters to a standstill. At 2 P.M. we restarted and successfully crossed the remaining two. Rain now recommenced, and we were forced to moor for the night. These rapids are not bad at this season of the year, but in the dead low-water they are considered with one other the worst on Upper Yang-tsze. I crossed them in March, 1901, when they were truly foaming cataracts. The loss of life and cargo yearly at these rapids is terrible.

Ficus infectoria occurs here, the most eastermost place where I have met with it. In Szechuan it is the commonest of trees, and usually shelters some shrine or temple. It is practically an evergreen, the young leaves unfolding almost as soon as the old ones have fallen. Lycium chinense, Myricaria germanica, and Distylium chinense are common fluviatile shrubs here.

The village of Hsin Tan is much scattered, and is noted for its inkstands. These are made of a kind of graphite, in which iron pyrites are embedded. The workmanship is often very artistic. A shifting population of trackers, boat chandlers, and retired junk owners make up the population of this romantically situated village.

April 28 we were delayed by a strong head-wind; it was 8 o'clock ere we started through the Mitsang gorge. This is only about a couple of miles long, and is really a continuation of the Niu-kan gorge. The hills open out a little at the Hsin Tan, but there is no break in the range of hills as with the other gorges. The cliffs in this gorge are very high and steep—in one place fully 2,000 feet sheer. These vertical cliffs are for the most part bare, but in places Chionanthus retusus is conspicuous. With much hard sculling and shouting we reached the middle of the gorge, where it is possible to track for a short distance. Very soon the tracking path came to a finish, and we took our trackers on board again. The head-wind continued to annoy us, and it was with the utmost difficulty and great relief to all that we got clear of this gorge.

From the head of this gorge to the town of Kui the river is one long succession of rapids and races. Many reefs of rock stretch across the river, jutting out at nasty angles, and rounding these is a very difficult task. In our passage through this dangerous reach we passed a couple of junks wrecked—an ominous sign. Having crossed the two nasty rapids opposite the town of Kui, we moored for the night. At these rapids we pressed native trackers into service, and they were dissatisfied with the remuneration made. Thinking to appease them, I gave another hundred cash. This only increased the hubbub, thanks to the presence of a couple of women. They began quarrelling among themselves, and it was fully an hour ere all was quiet.

The head-wind and strong current made it a very heavy day. The poor, patient, bullied trackers were quite tired out. Poor fellows, a dog's life seems preferable to such as theirs! Nothing to live for except their rice, and to earn this they have to work like beasts in the field. Their sure-footedness is simply marvellous; they walk easily where one would think a chamois could scarcely move. Flowers are everywhere abundant. The variety is great, but all are common around Ichang. Roses—R. lævigata, R. moschata, R. microcarpa, and R. Banksiæ are everywhere; I never saw them finer. On one branch of R. lævigata I counted fifty fully-expanded flowers, some of which measured 4 to 5 inches in diameter. Pistacia chinensis was a common tree to-day. It often occurs in small groves with tombs beneath its shade. It attains a large size, being often 40 to 60 feet in height, and with a correspondingly thick trunk and large, spreading branches. At all seasons it is a strikingly handsome tree, and in late autumn vies with Sapium sebiferum in the richness of its crimson tints. The wood is valued for its toughness, and makes the finest rudder-posts for junks. The young shoots are eaten in the same way as those of the Cedrela sinensis.

On the cliffs opposite Kui Spiræa Thunbergii occurs. It is quite common in the Wushan gorge, but I did not find it nearer Ichang than here. It grows in the niches of the rocks where there is little soil or moisture. It is the first of all the Spiræas to flower, and is now in ripe fruit. I first gathered it in flower here in early March, 1901.

Ever on the look-out for something to satisfy the "inner man," I to-day bagged a cock pheasant and a species of partridge. The latter has red legs, and is much larger than the common English bird. It frequents stony places on the hillside. I presume it is merely the ordinary "red-legged partridge," but, whatever its name, I found it excellent eating. *E. H. W.*

TREES AND SHRUBS.

FLOWERING CHERRIES.

On the occasion of the meeting of the Royal Horticultural Society on May 9 there were several varieties of flowering Cherries shown which are as yet comparatively rare in gardens, and have certain points to recommend them to planters. One of these is Cerasus (Prunus pseudo-Cerasus) J. H. Veitch, exhibited by Messrs. Paul & Son, Cheshunt. The plant flowers abundantly in the manner of C. Watereri, which is like C. Sieboldi, and it carries tender rose-coloured blossoms. C. J. H. Veitch, as shown, had blossoms rather larger than either, but its chief recommendation is its earliness in flowering, exceeding C. Watereri in that respect. The same firm likewise staged C. (Prunus) Padus flore-pleno, with small, white blossoms numerously produced, making it an effective lawn or foreground shrubbery standard. *F. M.*

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

FLORAL AWARDS. — With reference to the Editorial article in the issue for May 27, relating to Floral and Fruit Awards, may I be permitted to say, as one of the Floral Committee, and speaking I am sure for most of its members, that financial considerations have very little to do with the decisions arrived at, except in so far as merit is or should be correlated with value. I have been a member of that Committee now for a good many years, and the conception of its main motive in my mind is the recognition of improvement and of novelty if the latter involves advance in or gain to our floral wealth. In making these awards, consideration is undoubtedly given to the practical value of the plants concerned for horticultural purposes, as certainly should be the case with a Committee elected by the Royal Horticultural Society. Hence a plant such as cited, a Welwitschia or a Rafflesia, would quite conceivably not be honoured with an Award, though it would probably be referred to the Scientific Committee to be dealt with on botanical lines. The odour alone of the Rafflesia would disqualify it on practical grounds. In the Floral Committee the award of a Botanical Certificate which is occasionally made implies that a plant is botanically interesting but not horticulturally, and this being so I am at a loss to understand the alleged inappropriateness of the award of a First-class Certificate to Meconopsis integrifolia, which was at once seen to be highly interesting from both points of view—a fact which to my mind was peculiarly appropriately recognised by the two awards of the Scientific and Floral Committees. Botanical interest and horticultural value are by no means necessarily associated, and I maintain that it is the latter which the Floral Committee are bound in duty to the public to keep in the forefront. It must not be forgotten that the Royal Horticultural Society's Committees are practically the elected judges of what the horticultural public should obtain. These awards are published far and wide as indications of novelty or improvement. The First-class Certificates are reserved for something better than the comparative "commonplace" step-by-step improvements to which Awards of Merit are given. Hence the Meconopsis award could not, to my mind, "lower it to the category of the commonplace," but, on the contrary, lifted it out of it, so far at any rate as the verdict affected public knowledge. Turning now to such valuable introductions as Primula Cockburniana, we have in this plant undoubtedly the starting-point for a wonderful series of fresh tints in the already rich Primula family. The colour is altogether novel—a rich orange-scarlet. As seen, however, at its first *début*, the new colour was the sole charm of the plant exhibited, and to my mind the Committee would have stultified itself by giving it a First-class Certificate without having an opportunity of seeing it when better developed, while an Award of Merit to such an acquisition would indeed have lowered it to the level of the commonplace. Its horticultural value, in point of fact, remains to be established, though its botanical value is beyond all doubt, and was appropriately recognised in the proper quarter by the Scientific Committee. The implication that the Society's credit was saved by the Scientific Committee, while the Floral Committee failed to do so, is hardly fair in view of the circumstances; its botanical value was *in esse*, its horticultural only *in posse*. To my mind it would be a salutary rule for the Floral Committee not to issue Botanical Certificates, but to refer plants which they consider worthy of such to the Scientific Committee. This would obviate the slur which now practically attaches to such certificates when given by the Floral Committee, whose province is a different one. *Chas. Druery, V.M H., F.L.S.* [Our correspondent, from his point of view, is quite justified in his remarks: but few know better than he that the outlook of the Royal Horticultural Society is, or should be, much more catholic, and the action of its Committees at once more discriminating in some points, and less restricted in others. However valuable a First-class Certificate may be for commercial purposes, it has, to some extent, lost its significance to those plant-lovers or fruit-growers who are not in the trade, by reason of the frequency with which it is given. The "Botanical Certificate" is held in low estimation by the trade, mainly, we take it, because the plants thus honoured are not effective enough to be used for purposes of decoration, or, as the phrase goes, because they are not "garden plants." What seems to be wanted is a "Special Certificate," to be awarded by any of the Committees or by the Council to such plants as from any cause whatever possess special merit. Had such a special award been made to the Meconopsis or to the Primula, or to both, it would at once have been seen that these plants possessed an interest beyond that attaching to the ordinary run of plants to which First-class Certificates are awarded. As it is, the Meconopsis was relegated to the ordinary pass-list instead of to the honour-list, whilst the Primula, in some ways of even greater interest, was not recognised in any way by the Floral Committee, either in Vincent Square or at the Temple. We know, of course, that there were reasons for this—valid enough in existing circumstances, but giving rise to an anomaly which a special award would have obviated. The Council already take it upon themselves to make such awards, independently of the Committees and the judges who are restricted by regulation or custom, and they might with advantage have done so in the present instances. Ed]

GARDEN PATHS.—I can assure Miss Turnor that I never criticise an article without having due regard to facts. Miss Turnor says, in the fourteenth line from the bottom, p. 226, when writing of roads—not paths—"It will improve the wearing quality of the road if this last layer is lightly coated with tar." Again, Miss Turnor says, p. 342, "Gravel requires constant raking and rolling." Such an assertion only displays a further want of practical knowledge of the subject. Gravel properly laid should never be sufficiently loose to enable a rake to be employed. If gravel is laid with water while being rolled, and is of a binding nature, no trouble after it is "set" is experienced. A broom to remove leaves or refuse of any kind only is needed before rolling, which should be sufficiently attended to. Miss Turnor says, "the road should be excavated 2 to 4 feet deep, according to the nature of the soil." Assuming then it is excavated 3 feet deep, rough stones are laid at the bottom one-third the depth—1 foot. Now this leaves a depth of 2 feet to be filled with "granite, flint, or slag," as quoted by Miss Turnor, p. 342. This is the point to which I still take exception, not only on account of the cost, but of the utter waste of material. If this top space, 2 feet, is not to be filled up, will Miss Turnor say what is the ultimate finish of the road? In treating of smaller paths Miss Turnor says "there is no need to excavate so deeply, but gives no depth; now, she says, on p. 342 18 inches is the usual depth, but 2 feet is generally ample. I should think it is! Who would think of making an ordinary garden path, where there is no wheeled traffic, 1 foot deep, let alone 2 feet? Unfortunately I have never had the chance to get granite for paths—very few gardeners have to any extent. Flints picked from the land cost 5s. per load here, and 1s. for breaking, and this is purely an agricultural district, in which flint-stones abound. Certainly we cannot get materials at such low prices as Miss Turnor quotes, thus my criticism of the unnecessary outlay. Miss Turnor certainly advised the excavation to be 4 feet deep, and if she did not intend to fill it up I would ask again, How is the road to be finished? *E. Molyneux, Bishop's Waltham.*

EREMURUS FOR LARGE BEDS.—For grouping in large beds against a background of Holly, Laurel, Coniferæ, &c., there is much to recommend the beautiful and stately Eremurus as an early-flowering plant. Comprising quite a variety, and extending as they do in their native state from Asiatic Russia to the Himalayas, they only require a little protection from spring frosts, otherwise they are perfectly hardy. We have a bed of eighteen plants, planted in the gardens here, December, 1903, the varieties used being E. himalaicus and E. robustus, which I consider two of the best. Last year these plants threw one spike each about 6 feet high; to-day (June 2) they are again almost in full flower, each plant throwing at least two spikes, the tallest of which, although not finished growth, measures 8 feet 4 inches in height, and fully 12 inches in circumference at the flower base, while the very smallest measures over 4 feet in height. They are planted in a rather heavy soil, but get no stimulants of any kind. When the young crowns begin to move early in March I top-dress with about 9 inches of sharp sand. Again, about the beginning of April they appear for the second time, when we use 9-inch pots for a protection at night only, or during severe frost. When they become too tall for the pots to be used I place a few Spruce and Birch branches upright in the bed, which is all they require until the flower-spikes are ready for staking, and when in full flower they amply repay the small amount of labour bestowed upon them, as without doubt they are at present the finest feature of the garden. *H. MacFadyen, The Gardens, Cuckfield Park.* [Two good photographs were obligingly sent, but as we have frequently published similar illustrations there is no necessity to do so on the present occasion. Ed.]

DORMANCY OF INSERTED ROSE-BUDS.—In July 1903, I inserted three fine buds from "Mme. Pernet Ducher" in three vigorous shoots of a half-standard stock of Rosa lucida. They remained plump and fresh-looking throughout the rest of 1903, through the whole of 1904, and up to the month of April of the present year, when every one of them began to grow vigorously. Since then a rose-grub in each of them ate out the heart. Subsequently two of the three have rallied and have produced grand, healthy growing shoots. One would be glad to know of any similar case of suspended growth of inserted rose-buds. *G. Paul, F.R.Met.Soc., Harrogate, June* 10, 1905.

TULIPA SUAVEOLENS AND T. PRÆSTANS.—On perusing the article contributed by Mr. G. B. Mallett, it strikes me that he evidently overlooked my note on T. præstans which appeared in your issue of June 6, 1903, p. 364. What also surprises me is that Mr. Mallett, who refers to the plate 839 of the *Botanical Magazine*, apparently has not taken the trouble to inspect that plate, or he would have seen that the Tulipa suaveolens of Roth is nothing but the old Dutch red, yellow-margined, sweet-scented Duc Van Tholl Tulip, and not the tall, scarlet, many-flowered Central Asiatic Tulip, which he is writing about. He will also find a fine-coloured plate in *Redouté les Liliacées*, t. iii. The description he gives of T. suaveolens is also inaccurate; it applies in reality to my T. præstans. If any description of the old, universally-known Duc Van Tholl Tulip (T. suaveolens, Roth) was wanted, why not have given the right description, taken from the original source (see Roth's synopsis in *Neue Annalen der Botanik*, vol. iv., p. 44, or Baker's *Revision of the Genera and Species of the Tulipeæ*). Even such an easily accessible book as *Nicholson's Illustrated Dictionary of Gardening* publishes an engraving of the true T. suaveolens, and describes it as the Duc Van Tholl Tulip. If further authentic proof be wanted that Tulipa suaveolens, Roth, really represents the Duc Van Tholl Tulip, I may here cite the following phrase taken from Mr. Baker's description of Tulipa suaveolens: "In hortis dintissime culta sub nomine 'Duc Van Tholl' (see *Revision of the Genera and Species of the Tulipeæ*, by J. G. Baker, *Journal of the Linnean Society*). The original dried specimens of Tulipa suaveolens of Roth, a German botanist who lived near Bremen in the early part of the last century, are preserved in the Oldenburg State Museum. I have examined them, and they clearly and unmistakably represent nothing but the old Dutch Duc Van Tholl Tulip, the bright yellow margin of which in the dried specimens, which are now nearly a hundred years old, shows as clearly as if the flowers had been dried a few days ago only. It is also evident that the said German botanist, Herr Roth, could not possibly have described the Central Asiatic Tulip which Mr. Mallett is discussing, as at that time Central Asia was a *terra incognita* for European botanists. This point settled, I would once more ask Mr. Mallett to turn for further information respecting the T. præstans to my article in these columns above cited. It is most unfortunate that Dr. Regel, always so keen in botanical matters, made the error of referring this Tulip to Roth's T. suaveolens, with which it has absolutely nothing in common. In fact no two Tulips can be more widely different in bulb, foliage, flowers, and every other botanical character than are the T. suaveolens (*i.e.*, the old Dutch dwarf and sweet-scented Duc Van Tholl), and the tall, many-flowered Central Asiatic Tulip which Dr. Regel mistook for Roth's T. suaveolens by prematurely describing it from a poor, badly-dried herbarium specimen. With all possible reverence for the memory of so great an authority as Dr. Regel, I cannot imagine why we should persist in perpetuating so obvious an error as has been committed in the present case, the more so as I hold written proof from Dr. Regel's son (Dr. Albert Regel, of St. Petersburg), that his father, on becoming better acquainted with this particular Tulip, became fully convinced that it needed to be described as a new species. These facts have induced me to rename Dr. Regel's Tulip, and distribute it as Tulipa præstans, now that Messrs. Van Tubergen have obtained an abundant supply of it through their Bokhara collector. That the strain lately obtained by the Messrs. Van Tubergen differs in time of flowering, &c., somewhat from the first importation of this Tulip obtained by Dr. Regel from his collector, now about twenty or twenty-five years ago, I readily admit, but that both belong to the same species, which I have called T. præstans, is also absolutely certain. A Tulip collected in a valley will have an earlier time of flowering than one which occurs at high altitudes, and it may in course of time also have assumed a variation in colour, &c.; but if both present the same botanical characteristics it would be foolish to establish two species. During the present season there have been in flower in Messrs. Van Tubergen's nursery considerable breadths of the Bokhara Tulips, T. præstans, T. Fosteriana, and T. Tubergeniana, three perfectly distinct species, but the variation in each of these is often extreme. If there be any real need to offer the T. præstans of Regel's distribution under a different name from the one now being sent out by Messrs. Van Tubergen, there is no better way I think than to call the one T. præstans Regel's variety, and the other T. præstans Tubergen's variety. The principal thing is that the name T. suaveolens, Roth (the old Dutch Duke Van Tholl), should altogether be dissociated from the totally different T. præstans. *John Hoog, Haarlem, Holland.*

THE KEW GUILD AND GARDENERS.—I may say that a similar proposal to that reported in the Press was made at the first annual dinner in 1900, and since then I have discussed the question with a great many members of the Guild, the majority of whom express themselves in favour of some united action being taken to improve the very unsatisfactory conditions under which gardeners are now working. As the Guild from its start has never had an official character, but is an absolutely independent body, it is difficult to see how the "proposed action would be embarrassing to the branch of the Government responsible for the administration of Kew. Moreover, the majority of the members are at present in no way connected with Kew, and it is not merely as a society of Kewites that the Guild may act, but as a society in which every branch of the profession without exception is widely represented. And to show that we do not "arrogate" to ourselves this task, I hope the day is not far distant when other organisations will join their forces to those of the Guild in a common effort to improve the position of gardeners both socially and professionally. I gather from the concluding remarks of his letter that Sir Wm. Thiselton-Dyer considers that the remuneration of gardeners is at present commensurate with their ability. That being so, the latter must be about equal to the skill of an ordinary labourer. Everybody knows, however, that it is to the gardener that we owe such magnificent displays as are seen at the Temple Show, Kew, and elsewhere, and some people know what a high order of intelligence is required to produce these displays. As to gardeners applying themselves to diligent professional study they will only be able to do that when they receive a living wage and are free from the care of supporting themselves and families on what is often a mere pittance. *Old Kewite.*

—— The word "politics" has been defined as "the science of government," and it seems to me there can be no such thing as "horticultural politics" at present, because we have a profession without any government, and that is the one great fault which requires remedying. If we can only get the profession properly combined and organised, existing evils can be remedied. But when Sir W. T. Dyer goes on to say "When the gardener is worth more he will get more," he is under a wrong impression altogether. The law of supply and demand governs the gardener's wages. We have at present a supply many times greater than the demand, and I am constantly hearing of good men who cannot get situations; while there are several hundreds applying for every situation they can hear of, there is no chance of the average gardener getting more wages. On the contrary he is sure to get less as time goes on. By all means let the gardener study the science of his profession, but pay him a reasonable wage to enable him to do this and to do his profession justice. I, too, am strongly opposed to trade-unions, but I have not yet heard of one in any of the professions, and gardeners ought certainly to keep above those tactics. *W. H. Divers, Belvoir Castle Gardens, Grantham.*

—— In last week's issue of the *Gardeners' Chronicle* Sir W. T. Thiselton-Dyer's letter states that when the gardener is worth more he will get more. As to diligent study and its intelligent application, those who have studied hard and work hard in putting their knowledge into practical form think themselves fortunate to be able to get 30*s*. a week for giving some one else the use of it. Now he is told that when he is worth more he will get more. I think the principal cause of low wages is that the gardening profession is overcrowded, like a good many more callings. If a situation is advertised and over a hundred gardeners apply for same there is sure to be one man among the applicants who will take the same at the lowest offer under sheer necessity, on the principle that "half a loaf is better than no bread." No one can blame a man for making sure of half a loaf. Surely a gardener who has to grow anything that is wanted from a Pelargonium to an Orchid, and from a Radish to a Tomato, Cabbage to Asparagus, a Gooseberry to a Melon, is worth as much as a road-sweeper, who gets as much for working six days as a gardener does for working almost the whole seven (counting Sunday work), beside an hour or two in the evening if extra busy. Yet he cannot command his value owing to overcrowding. Any society founded for the betterment of gardeners should be supported by gardeners throughout the Kingdom if they wish to improve matters at all. I have had nineteen years' practical experience, and my pay is now £1 a week, and a building called by courtesy a "cottage." Well, my wife, self, and family of three cannot live on air, and get ous family clothed free. I have to hand over 17*s*. 6*d*. a week for household expenses. This leaves me the princely sum of 2*s*. 6*d*. a week—3*d*. *Gardeners' Chronicle*, 6*d*. club money, 3*d*. insurance for children, there then remains 1*s*. 6*d*. for clothes, boots, visits to shows to see anything fresh in the horticultural world, and a holiday in summer as well. I hope that I shall soon be estimated at a little higher value in my employer's opinion, for, like Oliver Twist, I want more. *W.*

VANISHING SPECIES.—The article signed "P." in the *Gardeners' Chronicle* for January 28 concerning Statice fruticans interests me greatly, as it is an additional proof that the species is dying out, and has not now power of increase sufficient to enable it to survive. That it crosses with other species is in favour of Darwin's theory that cross-fertilisation may be a necessity of plant-life. It is well known that he remarked that most flowers were fertilised by pollen from others of the same species, and that matters were so organised that the flowers attracted the insects most helpful to this crossing. Further, that anemophilous species are fertilised by the agency of the winds in conveying the pollen from plant to plant. In young subjects with full powers of spreading this crossing is less essential than in old and weak ones, where it is absolutely necessary. Thus is explained the case of the well-known Psiadia rotundifolia from St. Helena, which, as I said in a recent note in the *Gardeners' Chronicle*, does not yield fertile seeds because only one plant of the species exists which forms few or no seeds capable of germinating. It is so with other plants also. Certain Campanulas, especially C. Allionii, one of the most beautiful types of the genus, is old and local; yields but little seed, and when grown as a solitary plant these seeds germinate badly or not at all. The plant must be grown in colonies to yield fertile seed. It is the same with C. petræa, a rare plant with yellow flowers found in a valley of the Maritime Alps, growing on one particular hill, but which also grows some hundred miles away in the Italian Tyrol, where it is always very local. The young and vigorous C. excisa, on the contrary, I notice extends from the Simplon Mountains to those of Saas, then to those of the Val Anzasca even to Tessin; from the Bietschorn, near Belalp, that is to say, on the right bank of the Rhone, near Binn, then to the other side of the river, to Piedmont, in the Graian Alps, and which is also found on Mont Cenis, and doubtless elsewhere. This plant produces seed abundantly even in the case of an isolated specimen. In our garden of the Linnæa it has over-run the Willmott and Berkeley rockeries, the paths, the Grosvenor rockery, and now grows down among the stones over 60 feet from the summit. It is quite otherwise with C. Allionii, which, owing to its stoloniferous nature, grows in sturdy clumps, but does not increase spontaneously as the Linnæa, which now, as there are several specimens of it, yields an abundance of seed. A species, like an individual, has a limited existence. Like all other earthly things, it has a beginning and an end. Geological study reveals that species appear, and then at varying periods disappear. Aged and decreasing species are interesting, and should be protected by those who but too often assist in destroying them. *Henry Correvon, Floraire, Geneva.*

TEMPLE SHOW.—I have waited for an outburst in the Press against the bad ventilation of the tents, but excepting for a few passing remarks no point has been made of this great failing. The ventilation [or the want of it], as all visitors to the show will agree, was terrible, quite spoiling the pleasure of a visit, for the one idea of the majority of the public on entering the tents (as the passing remarks and personal experience will testify) was to get out again as soon as possible. As this must act against the popularity of the show, as well as against the business done by the exhibitors, it is to be sincerely hoped that the Council will take some steps to alter this for the future. It surprises me that more has not been said on the subject, but possibly the wish not to grumble at the arrangements of an excellent Society has made others hold their hand. *J. C. L.* [This complaint should have been sent to headquarters. ED.]

THE CALANDRINIAS.—Not a few beautiful hardy annuals do not put in an appearance in our gardens, probably for want of being sufficiently known. There are several species and varieties of Calandrinia, though not more than three or four find a place in seed catalogues. These are C. discolor, a South American species, producing bright magenta-coloured flowers in a long raceme; the blossoms open in July and August under sunshine, but the bloom is successional during that period. It is recommended that the seeds be sown in pots, so that they can be transplanted direct to the open ground. The soil should be dry and fairly light, and the position should be a sunny one. C. grandiflora is the finest and showiest of all; the flowers are large and of a rosy-purple colour, and the plant has thick, glaucous leaves. It should be planted in good loam, on a sunny position; it blooms earlier than C. discolor, and continues in flower until the autumn. C. speciosa is smaller-flowered, but produces large racemes of magenta-crimson blossoms; under the sunshine they expand fully. The plants should therefore occupy a sunny spot, and the soil be fairly dry. It is a prostrate-growing form, and does well for rockwork and other raised spots. There is a white variety also. C. umbellata is a dwarf form, and partly perennial in character, the plants are of low, tufted growth, and should be sown in light stony soil, or in a sandy loam with which some peat has been mixed. It succeeds best when sown in small pots in the autumn, kept in a cold frame during the winter, and put out in the open at the beginning of May. *R. D.*

TREATMENT OF PLANTATIONS WITHOUT REGULAR THINNING.—I was able to look through every part of my 6-acre plantation lately with my son, who is in the India Forest Service. I think the state of the trees is as near perfection as possible, and there is no Larch disease. He, with German forest training and with seventeen years' experience in Indian forests, differs from me. He objects to the openings which I have made. I think the openings have allowed a circulation of air among the trees day and night by the difference of temperatures in the openings from the parts where leaf canopy is fairly preserved, enabling the trees to absorb more carbonic acid gas as the air passes the leaves, and so promoting tree-growth from the greater amount of carbon deposited as the sap descends. His advice has been very valuable, first, as to branching the forest trees in 1892 and in 1897, as to cutting out long, thin Larch from the thick parts between the 20 feet cuts that were made in May, 1895, and under-planting with Beech and Silver Fir. The thick parts of Larch have been thinned to the present date, so that Larch are now 8 feet apart, and most of the ground is under-planted with Beech and Silver Fir. We only found one dead Larch in the field part this year. Before a 20-foot cut was made thirty, and sometimes forty, Larch died in one acre of Larch in a year. There is room for about 300 trees under the other trees, and I hope to put in some Douglas Firs where the trees are tallest, as they do very well for under-planting and grow faster than Silver Firs. *Henry Rogers, Plymouth.*

A CURE FOR MILDEW ON CUCUMBER-PLANTS.—It does not appear to be known by cultivators that the grafting of Melon and Cucumber-plants on to stocks of the Vegetable-Marrow enables the plants to resist that fatal disease mildew in the winter season. The Marrow-seeds are sown on the stations where the future Melon or Cucumber-plants will grow, and seeds of the latter are sown singly in small pots elsewhere, and when large enough the plants are inarched on to the stocks, their roots and the tops of the Vegetable-Marrows being removed after the union is complete. I have considered this procedure would probably impart such vigour to our present-day Cucumber-plants as to produce immunity to the "spot" disease now so prevalent on the plants under glass. So as to enable the Vegetable-Marrow-plants to attain a good size before being inarched, the seeds should be sown a fortnight before those of the Melons or Cucumbers. *F. M.*

SOCIETIES.

LINNEAN.

JUNE 1.—Professor W. A. HERDMAN, F.R.S., in the chair.

Mr. H. E. H. SMEDLEY, F.L.S., exhibited models of restorations of some extinct Dinosaurs, Ceratosaurus, and Diplodocus, also of Icthyosaurus, Plesiosaurus, Scelidosaurus, and Stegosaurus.

On behalf of Mr. J. F. Waby, F.L.S., the General Secretary exhibited two photographs of a Palm, Corypha elata, which had been previously mentioned. At the General Meeting of June 18, 1903, photographs were shown of two specimens of equal age; one had flowered normally, fruited and died; the other, instead of flowers, had thrown up a secondary central growth of leaves. The information now sent completes the record; the survivor in its turn had flowered and died, the inflorescences being developed from the secondary crown of foliage. On being cut down it proved to be 68 feet in height, diameter at base 3 feet 6 inches; diameter at base of secondary growth 1 foot 10 inches. The secondary growth itself was 4 feet in height, and the height of the spadix an additional 20 feet, 5 feet of this being bare stem, the remaining 15 feet crowded with twenty-nine huge branches. The crop of fruit numbered over 51,000 and weighed half-a-ton, most of the fruits being abortive.

Mr. C. B. CLARKE remarked that though this Palm grew in the Calcutta Botanic Garden, he had never noticed this abnormal behaviour, though branching in Palms occurred in many species.

The General Secretary exhibited sundry rarities from the books and manuscripts of Linnæus, especially three which had been lost sight of owing to their having been placed among the manuscripts which remained unbound. Each exhibit was explained, with the circumstances attending its production, and its special interest indicated.

The President remarked that in spite of what had been done in bringing to light certain items in the collections of Linnæus, doubtless much yet remained to be discovered, and instanced the fact of his exhibiting the artificially produced pearls from the Linnean Cabinets. He suggested that possibly among the Linnean manuscripts there might yet exist some documents still not utilised which would throw light upon the procedure adopted by Linnæus as regards pearl-mussels.

The last item was a paper by Mr. R. N. RUDMOSE BROWN, communicated by Mr. W. BOTTING HEMSLEY, F.R.S., F.L.S., on "The Botany of Gough Island.—Part II. The Cryptogams, exclusive of the Ferns and Unicellular Algæ."

GARDENERS' DEBATING SOCIETIES.

ADDLESTONE, CHERTSEY AND OTTERSHAW GARDENERS'.—The usual monthly meeting was held at Addlestone on Tuesday, June 6. The President, H. Cobbett, Esq., was in the chair, there being a very good attendance of members present, and the exhibits included a group of Hydrangeas from Mr. F. Norris; a collection of Sweet Peas from Mr. T. Culver; and a small collection of Sweet Peas and Royal Sovereign Strawberries from Mr. T. Stevenson. Awards were given in each case. A lecture on the various methods of propagation was given by Mr. Sturt, gardener to L. Cohen, Esq., Round Oak, Englefield Green. A discussion followed, in which several members joined. *T. S.*

BOURNEMOUTH AND DISTRICT GARDENERS'.—At the meeting held on June 5, Mr. C. Pearce, Astney Firs Gardens, in the chair, a paper on "Hybrid Rhododendrons" was read by Mr. C. Nippard, Ashton Court Gardens. A long discussion followed, after which the reader was heartily thanked for the information imparted. A fine collection of Calceolarias was exhibited by Mr. E. T. King, Higham Gardens, who was awarded the Society's Certificate of Merit.

EGHAM AND DISTRICT GARDENERS'.—At the last meeting of this Society, Mr. W. Swan in the chair, Mr. Peerless read a paper on "The Gloxinia." The essayist explained in detail the best method of cultivation, from raising seeds until the flowering stage, which proved a most interesting and instructive paper, and was much appreciated by the large number of members present. Mr. Brown, of Cooper's Hill College, exhibited specimens of injurious insects which he had himself collected, and offered some remarks on the haunts and peculiarities of these garden pests. Mr. Sturt, Round Oak, Englefield Green, exhibited a group of plants of Calla Elliottiana. Mr. Lingwood exhibited seedling varieties of Begonia in flower. They were raised from seeds sown in January. Through the generosity of a few ladies and gentlemen of the neighbourhood, the committee were enabled to open a library at this meeting, which should prove very useful to the members for reference and for obtaining information generally. *T. J. W.*

Obituary.

COLONEL WILLIAM GEORGE WEBB.—We regret to have to record the death, on Wednesday last, of Colonel Webb. Colonel Webb was the elder son of the late Mr. Edward Webb, a glass manufacturer in the Stourbridge district, and was born in 1848. Like his father he engaged in the glass trade, but ultimately left it, and in conjunction with his brother, Mr. Edward Webb, the present High Sheriff of Worcestershire, he successfully developed the well-known seed business at Wordsley with which their names are identified. Deceased was Member of Parliament for the Kingswinford division of Staffordshire. Colonel Webb was a magistrate for the county of Stafford, and his title of "Colonel" was due to his long association with the South Staffordshire Volunteers. He married a daughter of Captain Broughton Pryce, and leaves three sons and two daughters.

ENQUIRY.

JIMSON WEED.—Can any reader inform me what plant is meant by the term "Jimson Weed"? It is said that all kinds of insects have a great objection to the smell of this weed. Where is it usually found growing; in damp or dry places? *J. E. P.*

MARKETS.

COVENT GARDEN, *June* 14.

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.
Aralia Sieboldi, p. dozen	4 0- 6 0
Araucaria excelsa, per dozen ...	18 0-30 0
Aspidistras, green, per doz. ...	24 0-36 0
— variegated, per doz. ...	30 0-42 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0
— Sprengeri, per dozen... ...	6 0- 9 0
— tenuissimus per doz. ...	8 0-10 0
Bedding plants, store boxes, each	1 0- 1 6
Begonias, tuberous, per doz.	6 0- 9 0
Boronia elatior, per dozen ...	12 0-24 0
Calceolarias, yellow, per dozen.	4 0- 6 0
— herbaceous, per dozen ...	6 0- 8 0
Cannas, per doz.	5 0- 6 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0- 8 0
Coleus, per dozen	2 6- 4 0
Crotons, per doz.	12 0-30 0
Cocos Weddelliana, per doz. ...	12 0-30 0
Cyperus alternifolius, p. doz.	3 0- 5 0
Dracænas, p. doz.	9 0-24 0
Ericas, per doz....	12 0-30 0
Euonymus, per dozen	4 0- 9 0
Ferns, in thumbs, per 100... ...	8 0-12 0
— in 48's, p. doz.	4 0-10 0
Ferns, in 32's, doz.	12 0-24 0
Ficus elastica, p. doz.	9 0-12 0
— repens, p. doz.	5 0- 8 0
Fuchsias, p. doz.	5 0- 8 0
Heliotropes, per dozen	4 0- 5 0
Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
— Hortensia, p. dozen... ...	8 0-12 0
— paniculata ...	12 0-30 0
Kalosanthes, doz.	9 0-12 0
Kentia Belmoreana, per doz...	12 0-18 0
— Fosteriana, p. doz.	12 0-21 0
Lobelia, per. doz.	4 0- 5 0
Latania borbonica, per doz. ...	12 0-18 0
Lilium Harrisi, per dozen ...	10 0-18 0
Marguerites, white, per dozen ...	4 0- 8 0
— yellow, dozen	12 0-18 0
Mignonette, doz.	4 0- 6 0
Musk, Harrison's, per dozen ...	3 0- 4 0
Pansies, per box...	1 0- 2 6
Pelargoniums, per doz., Show.	9 0-12 0
— Ivy-leaved ...	6 0- 8 0
— zonal... ...	4 0- 6 0
— scarlet do. ...	4 0- 5 0
Petunias, double, per dozen ...	5 0- 6 0
Rhodanthe, per dozen... ...	4 0- 5 0
Rhododendrons, per dozen ...	24 0-30 0
Roses, H.P.'s, per dozen... ...	9 0-18 0
— Crimson Rambler (large), each	3 6- 7 6
Saxifraga pyramidalis, per doz.	12 0-15 0
Selaginella, doz.	3 0- 5 0
Spiræa japonica, per doz. ...	4 0- 9 0
Stocks, Intermediate, per doz.	4 0- 6 0
Verbena, Miss Willmott, per dozen... ...	9 0-12 0
— purple, p.doz.	8 0-12 0
— scarlet, p.doz.	8 0-10 0

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6- 0 9
— — medium, each ...	0 4- 0 6
— — short sprays per bunch...	1 0- 2 6
— Sprengeri ...	0 9- 1 6
— tenuissimus..	9 0-12 0
Adiantum cuneatum, per dozen bunches... ...	4 0- 6 0
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	3 0- 4 0
Grasses, hardy, p. dozen bunches	2 0- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails, per bundle ...	1 0- 2 0
— short green, doz. bunches	1 0- 1 6
Moss, per gross...	5 0- 6 0
Myrtle, per dozen bunches... ...	3 0- 4 0
Smilax, p. dozen trails	4 0- 6 0
Hardy foliage (various), per dozen bunches	3 0- 4 0

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones, per dozen bunches	2 0- 3 0
Bouvardia, per doz. bunches	6 0- 8 0
Calla æthiopica, p. doz. blooms	2 0- 3 0
— Elliottiana ...	12 0-18 0
Carnations, per doz. blooms, best American vars.	2 6- 5 0
— smaller do. ...	1 0- 2 0
— Malmaisons ...	8 0-12 0
Cattleya, per doz. blooms	10 0-12 0
Dendrobium Wardianum	1 0- 2 0
Eucharis grandiflora, per dozen blooms	3 0- 4 0
Gardenias, per dz. blooms	1 0- 1 6
Gladiolus Colvillei, per dz. bunches	4 0- 6 0
Gypsophila, per dozen bunches	2 0- 3 0
Iris, Spanish, per doz. bunches	3 0- 6 0
— best English grown, dozen	9 0-12 0
Lilac, per bunch.	0 9- 1 6
Lilium candidum	1 0- 1 6
— lancifolium, rubrum and album... ...	2 0- 3 0
— longiflorum...	2 0- 3 0
— tigrinum ...	1 6- 2 0
Lily of the Valley, per dozen bunches ...	12 0-18 0
Marguerites, white, doz. bunches	3 0- 4 0
— yellow, per dz. bunches ...	2 0- 3 0
Mignonette, doz. bunches ...	3 0- 5 0
Narcissus, per doz. bunches, Pheasant's Eye	1 0- 2 0
— double white.	2 6- 3 0
Odontoglossum crispum, pr. dz. blooms	2 0- 2 6
Pæonies, dz. bchs.	2 0- 4 0
Pelargoniums, p. doz. bnchs.	
— Show	4 0- 6 0
— Zonal, double scarlet ...	4 0- 8 0
— salmon & pink	4 0- 6 0
Poppies, Iceland, doz. bunches	2 0- 4 0
— Oriental, doz. bunches ...	6 0- 9 0
Pyrethrum, doz. bunches ...	2 0- 3 0
Rhodanthe, doz. bunches ...	2 0- 3 0
Roses, 12 blooms, Niphetos ...	1 0- 3 0
— Bridesmaid...	2 0- 4 0
— Kaiserin A. Victoria ...	2 0- 4 0
— General Jacqueminot ...	0 6- 1 0
— C. Mermet ...	2 0- 3 0
— Caroline Testout	2 0- 4 0
— Liberty ...	2 0- 4 0
— Mad. Chatenay	4 0- 6 0
— Mrs. J. Laing.	2 0- 4 0
— Sunrise ...	1 0- 2 0
Stephanotis, doz. trusses ...	1 6- 2 6
Sweet Peas, doz. bunches ...	3 0- 6 0
Tuberoses, per dozen blooms	0 3- 0 6

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, Victorian and Tasmanian, per case... ...	9 0-12 0
Apricots, French, per box ...	1 0- 1 6
— — per case ...	3 6- 4 0
Bananas, bunch	7 0-14 0
— loose, per doz.	1 0- 1 6
Cherries, per half bush.	4 3- 7 3
— per box ...	1 0- 3 0
Figs, per dozen...	2 6- 8 0
Gooseberries, per half bushel ...	4 0- 5 0
Grapes, Alicante, per lb. ...	1 6- 2 0
— Hambro, lb.	1 0- 2 6
— Muscats, p. lb.	1 3- 4 0
— Australian, p. box	17 6-20 0
Lemons, per case	12 0-18 0
Mangos, per doz.	4 0-18 0
Melons, each ...	1 3- 3 0
Nectarines, A., p. dozen... ...	8 0-15 0
— B., per dozen	3 0- 6 0
Oranges, per case	15 0-50 0
— Murcia, case	12 0-18 0
— Valencia, per case	16 0-36 0
Peaches, A., doz.	12 0-18 0
— B., per doz. ...	2 0- 6 0
— French, per box	1 0- 1 6
Pines, each ...	2 6- 4 6
Raspberries, per lb....	4 0- 5 0
Strawberries, Southamptons, per basket ...	2 0- 4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Artichokes, Globe, per dozen ...	2 6- 3 6
Asparagus, bunch	0 6- 6 0
— Giant	4 0- 6 0
— English giant	3 6- 4 0
— ordinary, per bunch... ...	1 6- 2 0
Beans, dwarf, per lb.	0 9-0 10
— Channel Island	0 9-0 10
— English, p. lb.	0 10-1 0
— Broad, p. pad	3 0- 3 6
Beetroot, bushel	3 6- 4 0
Cabbages, p. tally	2 0- 3 0
Carrots, new ...	5 0- 6 0
— bag	6 0 —
Cauliflowers, per dozen... ...	4 0 —
Cress, doz. pun.	1 0 —
Cucumbers, doz.	2 6- 3 6
Endive, per doz.	3 0 —
Greens, bushel...	0 9- 1 0
Horseradish, per dozen bundles	12 0-15 0
Mint, per dozen...	2 0- 3 0
Leeks, per dozen bundles... ...	4 0- 6 0
Lettuces, Cabbage, per dozen ...	0 9 0 10
— English, Cos, per dozen ...	0 6- 0 9
Mushrooms (house) per lb.... ...	0 10-1 0
Onions, Egyptian, per cwt. ...	6 0 —
— Spring, dozen bunches ...	3 0- 4 0
Parsley, per doz. bunches... ...	2 0- 2 6
Peas, Frame, per lb.	0 6- 0 8
— Flats	2 0- 2 6
— English, bus.	6 0- 8 0
Potatos, per ton	60 0-90 0
— Frame, lb. ...	0 2-0 2½
— Teneriffe, cwt.	11 0-12 0
— Jersey, p. cwt.	13 0 —
— St. Malo, per cwt.	11 6-12 0
— Cherbourg, p. cwt.	9 6-10 0
Radishes, p. doz. bunches ...	1 0 —
Rhubarb, York, per dozen ...	1 6- 2 0
— Natural, doz.	2 6- 3 0
Spinach, bush. ..	1 0- 1 6
Tomatos, English, p. lb.	0 5- 0 6
— Jersey, p. lb.	0 5- 0 6
— Valencia, per case	10 0-12 0
Turnips, new, doz. bun.	6 0- 8 0
Vegetable Marrows	0 8-0 10
Watercress, per doz. bunches.	0 5- 0 6

REMARKS.—Indoor Strawberries are nearly past; the few that are still arriving are making an average price of *3d.* to *6d.* for seconds, and *1s.* to *1s. 6d.* for best. There are plenty of ripe Bananas on the market, but there is no demand for them, owing to the sudden drop in the price of Strawberries. English Tomatos are very plentiful, and prices for these will probably fall during the week. Cherries are very abundant and cheap. Trade on the whole is good.

POTATOS.

Dunbars, *80s.* to *90s.*; various, home-grown, *60s.* to *70s.* per ton; seed in variety.

FRUITS AND VEGETABLES.

The following are the latest wholesale prices to hand from the undernoted markets:—

LIVERPOOL. — Vegetables: Potatos, *2s. 2d.* to *3s. 6d.* per cwt.; Jerseys, *12s.* to *13s.* do.; St. Malo, do; Turnips, *1s.* to *1s. 3d.* per dozen bunches; Cucumbers, *1s. 9d.* to *3s.* per dozen; Onions, foreign, *3s. 6d.* to *4s. 6d.* per bag; Parsley, *4d.* to *6d*, do.; Lettuces, *6d.* to *8d.* per dozen; Cauliflowers, *2s.* to *3s. 6d.* do.; Cabbages, *4d.* to *8d.* do.—Fruit: Oranges, Valencias, selected, *21s. 6d.* to *30s.* per case; do., inferior, *9s.* to *14s. 6d.* do.; Apples, Tasmanian, *8s. 9d.* to *12s.* per case; do., Western New York State, *16s.* per barrel; Bananas, *5s.* to *8s. 6d.* per crate; Tomatos, Valencia, *8s.* to *9s. 6d.* per case.

EDINBURGH.—Fruit: Oranges, Valencias, *18s. 6d.* to *25s.* per box; Grapes, English, *2s.* to *2s. 6d.* per lb.; do., Belgian, *1s. 4d.* do.; Lemons, Palermo, *7s. 6d.* to *16s. 6d.* per box; Apples, Australian, *12s.* to *14s. 6d.* per box; Bananas, *5s. 6d.* to *10s.* per bunch; Nuts, *18s. 6d.* to *40s.* per cwt.; do. Barcelonas, *35s.* to *36s. 6d.* per bag; Figs, *9d.* per dozen; Walnuts, Italian, *6s. 3d.* per stone; Dates, *15s. 6d.* per cwt.; Tomatos, Teneriffe, *5s. 6d.* to *6s. 6d.* per box; do., Guernsey, *5½d.* to *6½d.* per lb.; do., English, *7s.* to *7s. 6d.* per stone; Onions, Egyptian, *5s. 6d.* per cwt.; Carrots, *9s.* do.; Gooseberries, English, *3d.* per lb.; Potatos, Maltese, *18s.* per cwt.; do. Canary, *13s. 6d.* to *14s. 6d.* do.

DUBLIN.—Vegetables: Cabbages, York, *3s.* to *8s. 3d.* per load; Cauliflowers, *1s.* to *1s. 3d.* per doz.; Parsley, *1s. 6d.* to *2s.* per bag; Parsnips, *2s. 6d.* to *3s.* per cwt.; Salad, *2d.* to *3d.* per doz.; Onions, Tripoli, *3d.* to *5½d.* per bunch; Rhubarb, *1s. 3d.* to *2s. 10d.* per dozen; Turnips, white, *6d.* to *8d.* per bunch; Carrots, *8d.* to *9d.* per dozen; Potatos, *2s. 4d.* to *3s. 4d.*; Selected Main crop, *3s. 6d.* to *3s. 8d.* per cwt.

COVENT GARDEN FLOWER MARKET.

GROWERS complain of a falling off in trade, but this I think refers chiefly to the sale for bedding plants. The wet weather last week was a great hindrance, and the Whitsuntide Holidays always interfere with trade. Large supplies still come in. Crimson Rambler Roses are very good, and are obtainable in various sizes. There are also a few plants of the variety Dorothy Perkins, and H. P.'s of various sorts, but in these it is rarely that anything very good is seen. Fuchsias are plentiful, and there are some good standards coming from several growers, the prices for these vary from *2s. 6d.* to *5s.* each. Show Pelargoniums are now very good, but dwarf plants possessing good foliage do not realise more than *12s.* per dozen. Ivy-leaved varieties are good, and sell moderately well. Zonal Pelargoniums, except single-flowered white varieties, are considerably overdone, many being unsold at closing time. Marguerites are fairly plentiful, but dwarf plants which are freshly in flower are rather scarce; many now seen have grown tall and thin. Yellow-flowered plants are very good, and rather lower in price. The yellow Chrysanthemum segetum, both double and single, are very showy, and the dwarf plants of these, also good Mignonette, sell fairly well. Lobelia is not so much in demand, and it must be very good to realise an appreciable price. There are still a few Intermediate Stocks coming in, but they are not now wanted. Calceolarias are very good; the very best "yellows" make *6s.* per dozen, but many are sold at much lower prices. Herbaceous Calceolarias have been very good, but they do not sell very quickly. Hydrangeas are plentiful. H. paniculata is not very good, and the best plants sell well. H. Hortensia and H. Thos. Hogg vary in price but little. Ferns are selling better, but the trade for these will soon fall off. Good Codiæums (Crotons) with well-coloured foliage are in demand, especially the larger-sized plants, Well-coloured Dracænas would also sell well.

CUT FLOWERS.

Some sorts are now getting a little short. Lilium longiflorum is dearer; also the best Roses. We are now getting flowers of the variety General Jacqueminot and others from the open ground, but many of the flowers have been damaged by the bad weather. Carnations are plentiful, except good white varieties. The varieties of Souvenir de la Malmaison are just now at their best. Iceland Poppies are coming from all quarters. Hardy flowers of various sorts are overabundant. Lily of the Valley and Eucharis have advanced in price. Gardenias are not quite so plentiful as they were, but Stephanotis is more abundant. Sweet Peas are over plentiful and some are sold at very low prices. The Spanish Iris are abundant and good and command fair prices. The double white Daffodils still hold out, this morning there were large quantities of good fresh blooms. Gypsophila elegans in white and pink varieties is now coming in from the open ground and is much cheaper. Orchid bloom is not so plentiful. *A. H., Covent Garden, June* 14.

THE WEATHER.

METEOROLOGICAL OBSERVATIONS taken in the Royal Horticultural Society's Gardens at Wisley, Surrey. Height above sea-level 150 feet. The following are the "mean" readings for the week ending June 10, 1905.

1905.	TEMPERATURE OF THE AIR.				LOWEST TEMPERATURE ON GRASS.	TEMPERATURE OF THE SOIL at 9 A.M.			RAINFALL.	SUNSHINE.	
	At 9 A.M.		DAY.	NIGHT.							
JUNE 4 TO JUNE 10.	Dry Bulb.	Wet Bulb.	Highest.	Lowest.		At 1-foot deep.	At 2-feet deep.	At 4-feet deep.			
	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	ins.	hr.	min.
MEANS	53	51	61	50	49	57	57	55	Tot 2·90	1	31

GENERAL OBSERVATIONS.

THE FOLLOWING SUMMARY RECORD of the weather throughout the British Islands, for the week ending June 10, is furnished from the Meteorological Office:—

"The *weather* continued very fine and dry in all the more northern and north-western parts of the Kingdom, but in the south-east and south the conditions after Sunday were extremely dull and wet. At most stations rain was experienced every day, and many of the falls were unusually prolonged. Thunderstorms were experienced at Dungeness quite at the beginning of the period, and at Tunbridge Wells, Epsom, and London on Saturday.

"The *temperature* was below the mean generally, especially during the afternoons. The highest of the maxima recorded on Sunday ranged from 72° in England, S., and 70° in England, E., the Midland Counties, and Ireland, N., to 64° in the Channel Islands, and to 61° in Scotland, N., but later in the week the highest readings were not much above 60° anywhere, and often below it. On Tuesday nearly all the maxima over the southern counties of England were about 56°, while at Shaftesbury the thermometer only touched 49°. The lowest of the minima were registered on rather irregular dates. They ranged from 31° in Scotland, E., and England, N.W., and 35° in England, S.W., to 45° in England, E., and to 48° in the Channel Islands. At Southport a thermometer exposed on the grass fell as low as 31·6° on the nights of the 8th and 9th.

"The *rainfall*.—Scarcely any rain fell in Ireland, Scotland, and the North of England, but in England, S. and E., the fall was excessive, the respective totals for the week being six times and five times as large as the mean. In the Channel Islands the fall was more than twice the mean amount. The heaviest falls within the 24 hours were generally measured on the morning of Tuesday; at Dungeness there was 1·96 inch, and at Southampton 2·48 inches, while at Canterbury 1·95 inch was measured at 10 P.M. on Monday.

"The *bright sunshine* was abundant in several of the Northern districts, but very deficient in the South. The percentage of the possible duration ranged from 49 in Scotland, W., 48 in England, N.W., and 43 in Ireland, N., to 25 in the Channel Islands, 16 in England, E., to 10 in England, S."

THE WEATHER IN WEST HERTS.

Exceptionally Heavy Rainfall.—After eight cold days the weather became much warmer on the 13th inst. During the cold period in question the days were, as a rule, very cold, but not so the nights, which were only slightly colder than is usual at this season. The ground temperatures are rising, but the soil is still rather cold, the reading at 1 foot deep being about 1° lower, and at 2 feet deep about 2° lower than is seasonable. Rain has fallen on eleven of the last sixteen days, and to the total depth of 2¾ inches—equivalent to nearly thirteen gallons on each square yard of surface in my garden. Of that quantity 6½ gallons have come through the bare soil percolation gauge, and nearly one gallon through the gauge on which short grass is growing. The latter is the more remarkable of the two as the percolation through that gauge usually ceases altogether some time in May, and does not start again until late in the autumn. The weather has lately been very gloomy for a summer month. For instance, during the last nine days, the average duration of sunshine has been only 1¾ hour a day, which is as much as four and a half hours a day short of the average for the time of year. Four days out of the nine were altogether sunless, and on two others the sun shone for less than half an hour. During the same nine days the wind remained light and the direction persistently some point between north and east. The mean amount of moisture in the air at 3 P.M. was as much as ten per cent. in excess of a seasonable quantity for that hour. *E. M., Berkhamsted, June 14, 1905.*

[For actual temperature and condition of barometer at time of going to Press, see p. 378.]

ANSWERS TO CORRESPONDENTS.

Ampelopsis: *Shortlands.* The Vine has been killed by a fungus, traces of which are very obvious. It will be better not to plant another in the same soil.

Clianthus Dampieri: *F. G. G.* This species, known as the Glory Pea, is admittedly a difficult plant to cultivate in pots. In some of the south-western counties, where the climate is sufficiently warm, the species, and particularly C. puniceus, grows and flowers very well, and under such circumstances occasions much less trouble than when grown as a plant in a greenhouse. It will, however, be useful to you to remember that it is imperative to observe two rules—one being that the plant must be kept free from red-spider, a pest to which it is peculiarly liable, and the other that the roots must not be injured when repotting is carried out in March or April, after the growths have been pruned back. Some cultivators knock the bottom from the pot in which the plant is growing, and afterwards transfer the remainder of pot and soil into one of larger size. Some loamy turf, containing plenty of root-fibres with a little leaf-soil, silver-sand and charcoal added, is a suitable compost for use in potting. Pull the turf into pieces with the hands. Perfect drainage is necessary, and an abundant supply of water may then be afforded during the time the plants are most actively growing. It has been found that this plant succeeds better when grafted on to Colutea arborescens than it does when on its own roots. The late M. Marc Micheli, of Geneva, sowed seeds of C. Dampieri in February, and as soon as the cotyledons were sufficiently expanded for the operation to be possible, the terminal bud of the stock (Colutea arborescens) was removed and replaced by that of Clianthus Dampieri. It was found that union was soon effected, and the plants commenced to flower in June or July. On such a stock the Clianthus becomes a perennial greenhouse flowering plant. At the Ghent Show two years ago, a group of plants so treated occasioned the greatest surprise and admiration. An illustration of one of M. Micheli's grafted plants was given in the *Gardeners' Chronicle*, June 29, 1901, p. 419. See also the issue for January 19, 1901, p. 44.

Contribution: *X.* Your article was in course of preparation for insertion, but as a similar note on the same subject from your pen has now appeared in other papers, there seems to be no reason for publishing it also in these columns.

Cucumbers Diseased: *E. W.* We find no trace of fungus disease and can only suggest a check as being the cause of the young fruits dying at their tips. Be careful in affording water—too much or too little is alike injurious. Prevent cold draughts from reaching the plants. Do not overdose them with artificial manures. The water applied to the roots or used for syringing the plants should first be warmed to the temperature of the house in which the plants are growing.

Cucumber Plant: *J. D.* The powdery substance is Reticularia lycoperdon, one of the slime fungi. It is not a parasite, and will do no injury. If necessary the mass of spores can be sprayed or blown away.

Currants: *A. T. S.* See next week's issue.

Delphinium: *J. F.* We cannot find the maggot, but from what you say we have no doubt he is the culprit. Manure would do no good. Better burn the plants and get a fresh stock, taking care not to plant them in the same soil.

Evergreen Trees for a Screen: *G. J. Jones.* Any of the following trees will answer your purpose:—Pinus Laricio (Corsican), P. L. nigricans (Austrian), Pseudotsuga Douglassii (Douglas Fir), Thuya gigantea (T. Menziesii and T. Lobbii), and Picea excelsa (Norway Spruce). Planting should be done in autumn or spring.

Grape Spot: *G. C.* and *E. H.* Due to a fungus called Glœosporium ampelophagum. Spray with liver-of-sulphur, ½ oz. to a gallon of water.

Hydrangeas: *Ponica.* It is generally supposed that the blue colour in Hydrangea flowers is due to the presence of iron in the soil. You may therefore apply small quantities of sulphate of iron in solution, and note the result. It has been stated recently that applications of weak alum-water when the plants commence to grow are more effective than the iron. By dissolving the alum in a small quantity of hot water, afterwards diluting it with cold water, this method may be tried with very little trouble.

London Parks: *C. A., Cork.* Applicants for employment in the Royal Parks, Central (Hyde, St. James's, Regent's, &c.), should apply to the respective Superintendents, who will (if there is a vacancy) furnish the applicant with a form to be filled up and sent to H.M. Office of Works. A personal application at the various Superintendents' offices at 10 A.M. is preferable. For admission to the London County Council's Parks, apply to Col. Sexby, General Superintendent of these parks, at his office, 11, Regent Street, W. We know of no such stipulations as you suggest.

Manure-water and Peach-trees: *W.* We have received a further letter from Mr. Ward on this subject, in which he repudiates the construction put by Mr. Moore upon his previous references to the aspects of walls, and of the borders sloping from them. It is not necessary to continue the discussion further.

Names of Fruit: *E. B.* If you send Peach or other soft fruits to be named it is imperative that two specimens be sent. These should be gathered just before they are quite ripe, and be packed very carefully in soft material, and in a wooden box that cannot be broken or crushed in the post. Do not post at the week-end, when delay may be reasonably anticipated.

Names of Plants: *J. R.* Cercis siliquastrum (Judas-tree).—*G. P.* Piptanthus nepalensis.—*W. B. K.* Choisya ternata.—*G. B.* Pyrus intermedia.—*Miss E. W.* Spiræa chamædrifolia.—*J. A. F.* Tropæolum tuberosum.—*B., Wolverhampton.* Scilla amœna.—*T. A. F.* Tropæolum tuberosum.—*Sir A. H.* 1, Asphodelus ramosus; 2, Dactylis glomerata variegata; 3, Veronica pinguifolia; 4, Phyteuma spicatum; 5, Tiarella cordifolia; 6, Delphinium species, probably D. cashmerianum.—*Formosa.* 1, Masdevallia ignea; 2, M. triaristella; 3, Pleurothallis rubens; 4, Selaginella Wildenovii.—*Japonica.* Odontoglossum citrosmum album, and two of the ordinary rose-tinted forms, the darker one being exceptionally good.—*E. C.* Oncidium sphacelatum.—*W. F.* Cotoneaster affinis.—*H. W.* Iris sibirica.—*C. L. L.* The single Clematis is C. (Atragene) alpina; the double one is perhaps C. John Gould Veitch. The appearance of the Palm-leaves is probably the result of defective or injudicious watering.—*A. S.* 1, Alyssum calycinum; 2, Cerastium tomentosum; 3, Allium Moly.

Peach Mildew: *W. R.* The fruits and leaves are attacked by the fungus that causes Peach mildew (Oïdium leucoconium). Remove and burn all diseased fruits and leaves, and dust the healthy ones with flowers-of-sulphur.

Pear Leaves: *W. P.* The blistered appearance is caused by the Pear-mite (Eriophyes piri), a microscopical insect by no means uncommon. Destroy all fallen leaves by burning.

Potato: *J. T. S.* The Potato that failed to grow is dead—that is, the protoplasm in the cells is coagulated. How this came about it is impossible to determine from the specimen. In the second tuber the eruptions are not due to enlarged starch grains, but to cells of the rind that have divided rapidly owing to the presence of moisture, warmth and light.

Raspberry Canes: *K. & S.* We observe that the tops of the canes are dead, and assume the cause of this to be something connected with the roots. There is no appearance of disease of any kind, and it may be that the plants have suffered from drought at a particular time. Are the roots in a healthy condition, or do they show any sign of injury from the strong chemical manures you have applied to the soil?

Rhododendrons: *Shortlands.* See that the drainage is perfect, and apply leaf-mould or peat, but no manure.

Syringing Grapes: *E. M. L.* It is not customary to syringe Vines after the berries have been thinned. You can obtain the amount of atmospheric moisture necessary by frequently damping the surfaces in the house and by keeping the troughs which are fixed on the water-pipes filled with water or weak manure-water.

Tomato: *Norfolk.* The condition of the fruits is due to excess and consequent granulation of one of the constituents caused by lack of potash in the soil. Apply small doses of sulphate of potash, but do not use kainit. The amount of solid residue per gallon of the water you use is most unusual.—*W. D.* Apply small quantities of sulphate of potash, and if subsequently you notice any decay in the fruits send us further specimens.

Weeds on Garden Paths: *G. C.* Dress the paths with carbolic acid [Poison], mixing 2 to 3 oz. of acid to each gallon of water; or apply a sprinkling of finely-ground rock-salt occasionally, brushing in each application with a new birch or ling besom. The salt is much less dangerous and yet effective. In applying salt or any other weed killer take care not to let any get on to live edging, as Box, turf, &c. If you use the vitriol (sulphuric acid, Poison), you must dilute it by adding at least four times as much water as acid.

Yew: *A. T. S.* The result of the puncture of an insect, Cecedomyia taxi.

Communications Received.—R. L.—Lord M.—E.—Lord K.—Q.—W. E. G.—A. G.—F. J. C.—G. B.—S. W. F.—J. T.—Earl F.—W. H.—R. L. H.—Messrs. Cannell—Sir C. W. D.—T. A. S.—S. J. R.—Prof. Castro, Sicily—E. V. B.—D. & Son—Carnation—R. H.—W. T.—R. R.—K. & Son—J. R. B.—J. S., Tyrone—A. C. S.—W. H. W.—Dr. D., Germany—Merryweather & Sons, Ltd.—F. M.—M. H. Smith—C. Thompson.—F. J.—J. J. W.—T. A. Sprague—H. W. W.—A. D.—Chloris—S. A.—M. B., Holland.

THE

Gardeners' Chronicle

No. 965.—*SATURDAY, June* 24, 1905.

CONTENTS.

Arboriculture in Scotland 396
Benevolent Institution, Gardeners' Royal (Annual Dinner) 395
Book notice—
Author and Printer 391
Municipal Parks, Gardens, and Open Spaces of London ... 396
Chesfield, Hampton Wick 396
Chrysanthemum Society's outing ... 395
Colonial notes 392
Fruit industry and railway transit, the 396
Fruits, small foreign 397
Laburnum wood used for making chairs ... 397
Larch, a hybrid ... 389
Meconopsis grandis ... 397
Norwich, a pinetum at 396
Nurseryman, a Chicago 395
Obituary—
Adams, James ... 400
Orange, a hardy hybrid 391
Orchid notes and gleanings 390
Pink, the... 389
Plants, new or noteworthy—
Arachnanthe annamensis 391
Presentation to a gardener 396
Primula vittata ... 390
Roses at Kew 392
Societies—
Royal Horticultural 397
Yorkshire Gala ... 397
Week's work, the—
Flower garden, the 393
Fruits under glass... 393
Hardy fruit garden 393
Kitchen garden, the 393
Orchid houses, the 392
Plants under glass... 392
Wisley Gardens, the ... 394

ILLUSTRATIONS.

Plant and leaves of hybrid Oranges 391
Primula vittata, a new species from China 390
View of the ornamental stream in the grounds at Chesfield, Hampton Wick (Supplementary Illustration)

THE PINK.

HAPPENING to take up a volume of *Gossip for the Garden* for 1856, I found therein some remarks upon this pretty, sweet-scented garden flower. I write "sweet-scented" advisedly, for it is well known that some Carnations are not sweet-scented, although I never yet found a Pink that lacked perfume, or that was not hardy enough to stand out of-doors all the year round; but what is noticeable in most of the papers written upon the Pink was the apparently fixed idea that exhibitions of Pinks were essential to the very existence of the flower. There is no doubt that exhibitions give a considerable impetus to the growth of any flower, and such displays are very desirable, and do good in many ways; but when they become absolutely essential to the very existence of any class of garden flowers, it shows a sad falling-off in the taste of the flower-loving public. I well remember meeting, amongst others of the good old florists, at an exhibition of "The Metropolitan Floral Society," the late Mr. John Keynes, of Salisbury. I believe he pawned his watch to purchase his first collection of Pinks, and he stated at the meeting that he remembered the time when seven exhibitions of Pinks were held in Salisbury in one year. The florists at that time would look on one class of Pinks only, the "laced" varieties. There were three distinct shades of colour—purple, red, and black, but they never could make an exhibition of flowers that the general public cared to visit. Single flowers spread out on home-made stands, carefully dressed, can give no idea of the beauty in the garden of the plant when furnished with a hundred or more flowers and buds standing well above the silvery foliage, with the dew sparkling on every leaf and bud on an early morning in June. Moreover, for garden purposes there is no need to confine ourselves to "laced" Pinks, nor do I find any amateurs who grow the plants for their beauty in the garden, or for their sweetness as cut flowers in the house, very anxious to possess them. The pure white varieties are the most popular, and next, those that are white but with a slight rose or red tint in the centre of the flowers. Besides a collection of named Pinks much interest and instruction are to be derived from the raising of seedlings. I had a year or two ago a bed filled with a thousand plants, and for six weeks or more when the plants were in flower it was a source of great interest to me. There might have been 10 per cent. of them single or slightly passing into the double-flowered state, not more, but out of the thousand there were of good laced Pinks not more than a dozen.

The same remark applies to Carnations. You may raise a thousand flakes and bizarres, or rather, to put it correctly, a thousand seedlings from flaked and bizarred varieties, and not have six good enough to pass the critical examination of the florist. With Auriculas it is even more difficult; it seems almost impossible to raise a perfect flower from the florist's standpoint. The eye is too pale, the paste is too thin, the outline is not circular, and the body colour—oh, the body colour! it is never right. There is the standard of excellence in these which for want of a better term we must designate florist's flowers, and of course in the eyes of the florist these difficulties have to be overcome; but in the course of selection many beautiful plants quite outside the florist's standard may be selected and grown as "garden plants," and it cannot be denied that many of these are more valued than those that strictly conform to the florist's standard.

I am not decrying the true florist's type of the Pink, the Carnation, or the Auricula. I prize them highly, and fully appreciate the good work that has been done in the past by the florists who selected their flowers carefully and dearly loved them, but one never will get the amateur gardener to be tied down by square and rule. Every one of them has his own ideas as to "standards of excellence." There are ten growers of fancy and self-coloured Carnations where there may be one cultivating flakes and bizarres. "Want of education or bad taste," say the florists. Let it pass.

> "He that complies against his will
> Is of the same opinion still."

We may as well pass on to our Pinks. They are easily grown and easily propagated. I ought to know. The Pink and Pansy were my favourites even as a schoolboy; I have grown them and loved them for more than half a century. In those early years I had no frames, not even a glass light, but I took "pipings" the first wet day in July (the plants flower later in Scotland than in the South); they were simply dibbled into fine soil about 3 inches asunder, and I lost very few. I did not understand layering at that time, but it is a good plan to propagate some from layers. The small, wiry slips should be taken as "pipings" or cuttings. They ought to be planted-out where they are to flower in September. The Pink is nearly allied to the Carnation, and requires very similar treatment; but avoid pot culture if you want the "lacing" to be richly coloured and well defined. Growth under glass will give nice clear, clean flowers, but it will in some instances cause the lacing to disappear altogether.

To obtain a bed of good plants, Pink seeds should be sown in March; they germinate quickly in a hotbed of which the temperature is not excessive. The steam from manure might kill the young seedlings, therefore the violent heat should be past before any seed is sown of any kind. Prick the plants out into boxes as soon as the seedlings are large enough, and place the boxes in frames until the plants have started into growth. If they are planted out on a bed of deep, rich soil in June or July, they will make full plants to flower the following season in June. It is a waste of time to sow seed that has not been saved from the best named varieties. Even if the seed is saved from the best laced varieties comparatively few will give laced flowers, showing very clearly that it is not the normal characteristic of the Pink. The wild plant is self-coloured and fringed, so that the florist sets himself the difficult task of first obtaining by cultivation a double flower, which is also fringed; but he does not like a fringed or notched petal, and works until he has a variety with smooth or plain-edged petals. The self-colour must also be destroyed, and a white ground is obtained, but on the white ground has to be painted a rose, red or black colour, and this in a certain way, a daub of colour in the centre, and a band of the same colour running round the petals, leaving a white margin, and another space of white between the band of colour and the central blotch.

All this has been obtained from a very plain, simple wild flower of a rose or purple colour. We must therefore grant a meed of praise to the patient workers who have done so much for our enjoyment. In the process of selecting the seedlings every flower that has perfectly laced qualities should be set aside to be grown next season. There may be half a hundred growths at the base of the stems which may either be rooted as layers or taken off and struck as "pipings"; these, when well rooted, may be planted out in the open garden to produce a display of flowers next season. Besides the laced flowers the amateur will look for self colours, and especially for those with a blotch of colour in the centre of the flowers; besides, some of the seedlings with quite single flowers are admirable; but unfortunately they have the fault of being fugacious in character; but to make amends the plants produce them in profusion. *Jas. Douglas.*

TREES AND SHRUBS.

HYBRID LARCH.

IN the *Transactions of the Royal Scottish Arboricultural Society*, vol. xviii., 1905, p. 62, mention is made of a hybrid Larch, a cross between the Japanese L. leptolepis and the European L. europæa, the Japanese species having been the female parent. No further information is given, and we are left in ignorance whether the cross was a natural or an artificial one, by whom it was effected, and of other details which would be of particular interest.

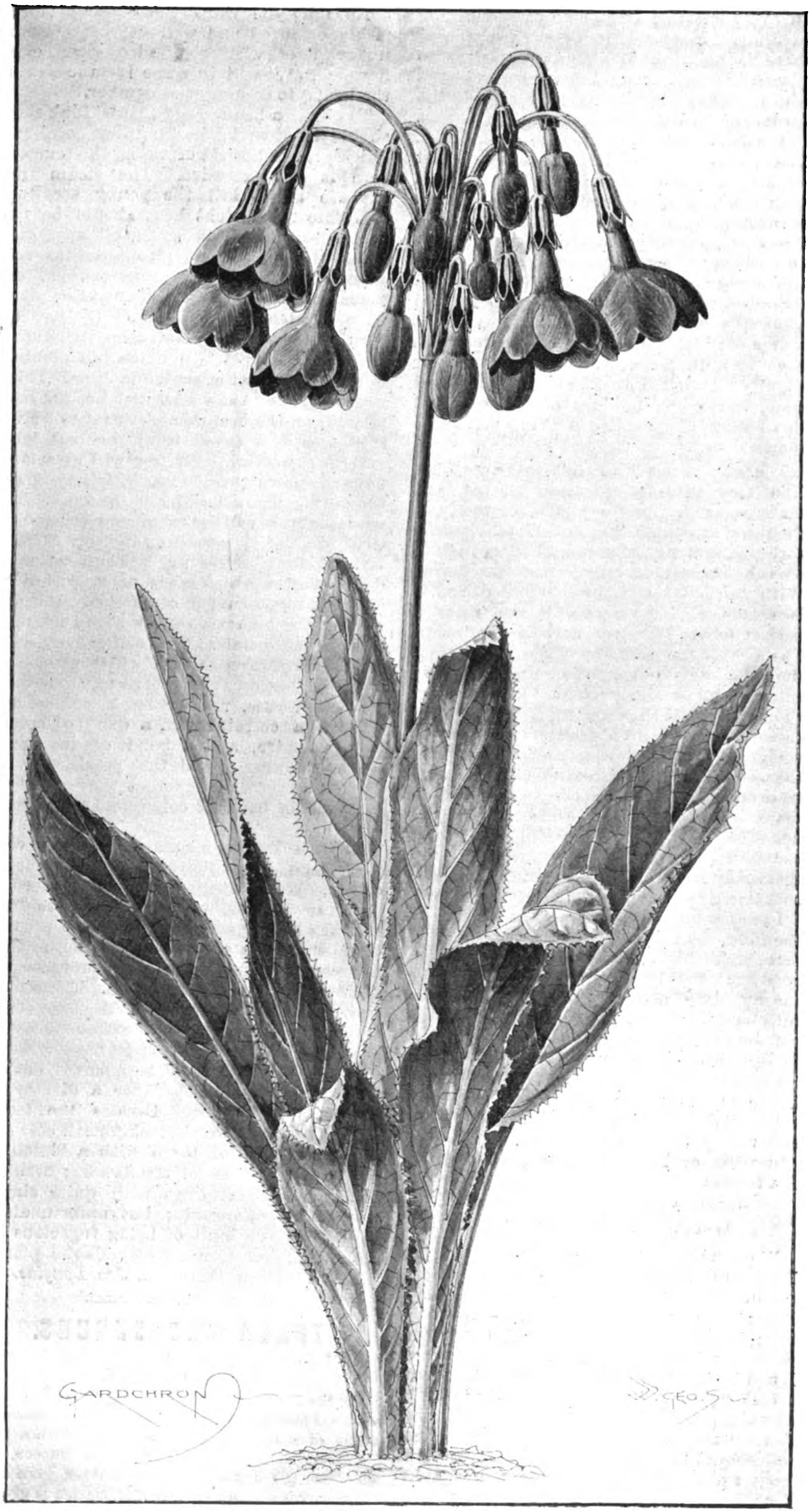


FIG. 165.—PRIMULA VITTATA, A CHINESE SPECIES: COLOUR OF FLOWERS MAGENTA SHADE OF PURPLE.

PRIMULA VITTATA,

Bureau and Franchet.

THIS species was first discovered by Prince Henri d'Orleans in 1890 in the neighbourhood of Talien-lu. Pratt also met with it in the same region about the same time. Messrs. Bureau and Franchet described it in the *Journal de Botanique*, v., 1891. The plant was introduced into the Veitchian nurseries by their collector, Wilson, who describes it as being common in bogs and marshes on the Tibetan border, between 9,000 and 10,500 feet. It flowered in an open border in Messrs. Veitch's Coombe Wood nursery in May last, and was exhibited before the Royal Horticultural Society on May 23, when it received an Award of Merit.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM SEIDELIANUM.

I OBSERVE at p. 355 a note by Mr. J. O'Brien respecting Dendrobium Seidelianum, Rchb. f., of which my Dendrobium Loddigesii is given as a synonym, and it is said that both names appeared on the same date. In July, 1887, I had to compare a dried specimen of a Dendrobium sent from China by Mr. C. Ford, and discovered that it agreed with the plant figured in 1833 in Loddiges' *Botanical Cabinet* (t. 1935) under the name Dendrobium pulchellum, although it was not the original D. pulchellum, of Roxburgh. I also discovered that Reichenbach had further included the well-known D. Devonianum as a variety of the same species. The consequence was that I wrote an article on the question, pointing out the confusion, and re-naming the Chinese plant D. Loddigesii (*Gardeners' Chronicle*, 1887, ii., p. 155). On the day that the article appeared the following note was published in the *Gardening World*:—

> "*Dendrobium Seidelianum.*—This is a fresh name attached by Professor Reichenbach to the well-known D. pulchellum (Roxburgh), which is quite a distinct thing from the old garden plant, as may be seen by Roxburgh's drawing kept at Kew. *J. O'B.*"

This note puzzled me greatly, for if the facts were as stated, D. Seidelianum would be a synonym of D. pulchellum, Roxb., but I afterwards found that they had been reversed. In a note in the third volume of *Lindenia* (p. 8), Reichenbach briefly remarked that he had given to D. pulchellum of Lindley the name of Seidelianum, in honour of M. T. J. Seidel, of Striesen-Dresde. This, however, does not help us much, for the D. pulchellum of *Lindl. Gen. and Sp. Orch*, p. 82, is simply D. pulchellum, Roxb., as Lindley himself states, though he afterwards wrote it D. pulchellum, Lindl., adding the synonym D. Devonianum, Paxt., and citing Loddiges' plate as belonging to the same species (*Journ. Linn. Soc.*, iii., p. 12). How he came to make such a series of mistakes I cannot explain, but merely point them out. As to the name D. Loddigesii, which has been accepted for over eighteen years, there is no reason in priority or anything else why it should be set aside in favour of D. Seidelianum, which by the way is only now clearly defined for the first time. *R. A. Rolfe.*

CATTLEYA MOSSIÆ NALDERIANA.

It is interesting to find that this distinct variety, described many years ago, is still in cultivation, and that its peculiar characteristics are unchanged. A plant has flowered in the collection of Mrs. Mount Batten at Mornington Lodge, West Kensington (gr., Mr. Yorke). The sepals are pale greyish-rose with purple margins. The petals have a feather-like band of silver-white up the middles, the rest being bright rose-purple with a slight silvery tint between the veining. Lip rose-purple with a reddish-orange base, and lighter orange patches on each side of the tube, and with a lavender-coloured crimped margin. C. M. Courtauld's variety, Rchb. f., which is described in *Gardeners' Chronicle*, June 2, 1888, p. 681, is allied to Nalderiana, but it is remarked that no others of the section are known. *J. O'B.*

NEW OR NOTEWORTHY PLANTS.

ARACHNANTHE ANNAMENSIS, *Rolfe, n. sp.**

A STRIKING species of Arachnanthe has appeared among the Annam importations made by Messrs. Sander & Sons through their collector Micholitz, and has just flowered with Mr. F. W. Moore at the Glasnevin Botanic Garden. It is one of a number picked out of this importation by Mr. Moore, and until it flowered was thought to be a species of Trichoglottis. On flowering, however, it proves to be very different. When I first saw a flower I thought it belonged to the old Arachnanthe moschifera, on account of the general shape and markings, but on comparison it proves to have a very different lip, and the leaves are also much more elongated. This, however, is its nearest affinity, and the lip is just as delicately mobile, responding to the slightest movement, like some species of Bulbophyllum or Cirrhopetalum, though very different in shape. Mr. Moore states that the plant is stiff and erect, about 18 inches high, and the inflorescence sent to Kew is over a foot long, and bears six flowers. They are just as large as in A. moschifera, and resemble some huge yellow spider, very heavily barred with red-brown, the resemblance being increased by the falcately-curved petals and lateral sepals. It is a very striking addition to a small but very remarkable genus. A. moschifera, Blume, the "Spider Orchid," was figured in the *Gardeners' Chronicle* on October 13, 1894, p. 435. *R. A. Rolfe.*

BOOK NOTICE.

AUTHOR AND PRINTER.

A BOOK whose sub-title explains its intended uses as a "Guide for authors, editors, printers, correctors of the press, compositors, and typists; with full list of abbreviations. An attempt to codify the best typographical practices of the present day." The compiler is Mr. F. Howard Collins, who has arranged in alphabetical order the most commonly used words, expressions, and abbreviations, and shows their correct spelling, the way in which they should be divided into syllables at the end of a line and the beginning of another. The sizes of paper and of type are given, the methods of punctuation explained, and a great variety of miscellaneous information afforded. We think many who are considered, or think themselves, fairly correct in their use of words will experience some surprise, when looking through this book, to see how commonly and unconsciously they make mistakes. How often, for instance, do we meet with the expression *double entendre* as applied to something with a twofold meaning. The book before us reminds us that the correct phrase is *double entente*, and so with many similar cases.

Amongst the abbreviations we meet with *G. Chr.*, as denoting the title of this Journal, but for telegraphic purposes the abbreviation is *Gardchron.*, written as one word; V.M.H. finds no place in the abbreviations, though its meaning is well known to our readers. The capital initial letter in Gardenia, Fuchsia, Ficus, Rhododendron, Geranium, and similar cases is omitted, though in most botanical books the capital is retained for generic names; "ab incunabilis" seems hardly correct. We might extend incidental notes of this description to almost any extent; indeed, we do not recommend readers or writers who are pressed for time to do more than confine themselves strictly to the search for the particular entry they require. The temptation to read on and on is very great, and in the circumstances we have named must be resisted. As this is really a great compliment to the book we need say nothing more in its praise. Authors, editors, and proof-readers will find it indispensable. It is published by Henry Frowde.

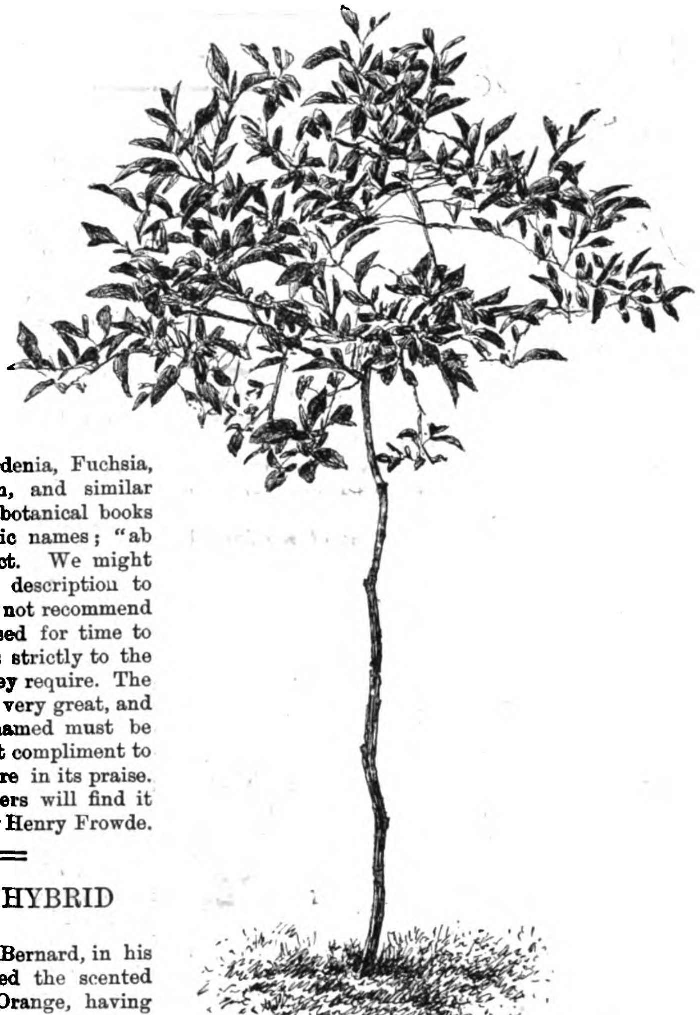


FIG. 166.—HYBRID ORANGE.

THE MONTAUBAN HYBRID ORANGE.

IN the year 1894 M. Armand Bernard, in his garden near Montauban, fertilised the scented flowers of a tender variety of Orange, having large fruits with pollen from Citrus triptera. The object he wished to attain was the production of a hardy Orange with edible fruits. From this artificial fertilisation he raised several hardy hybrids, all different from sorts already in cultivation, and all bearing spines. Some of the young plants resembled the male, others the female parent.

The first hybrid flowered in 1903. The flowers were white, scented, resembling those of C. triptera, but narrower. The fruits were from 2½ to 3 inches in diameter, larger than those of C. triptera, but with a thicker rind. The fruit so far is too dry to be palatable. The first hybrid, shown at fig. 166, has been named Armand Bernard, and is on its own roots. In habit it has a slender stem, having grown up among other plants and remained etiolated. The specimen survived 12° of frost, but the drought of 1904 caused it to drop

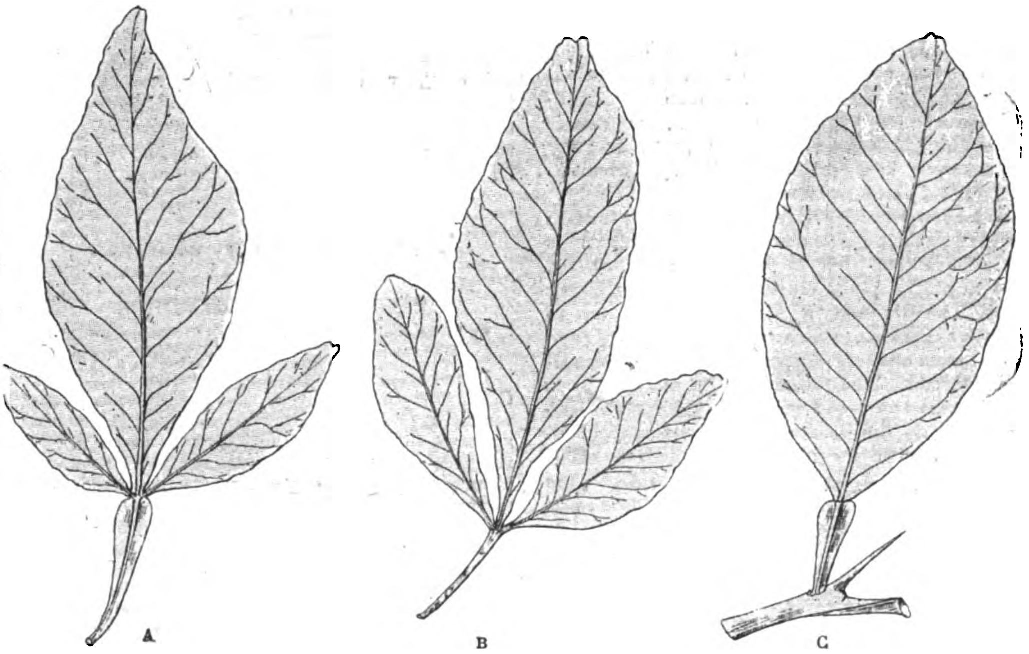


FIG. 167.—LEAVES OF HYBRID ORANGES. (SEE TEXT.)

---

* *Arachnanthe annamensis*, Rolfe.—A stout, erect plant about 18 inches high. Leaves somewhat recurved, linear-oblong, somewhat bilobed at the apex, coriaceous, 11 inches long by an inch broad, bright green. Inflorescence over a foot long, six-flowered in the upper half. Bract ovate-oblong, obtuse, 5 lines long. Pedicels 14 lines long, suffused with light pink. Flowers much resembling Arachnanthe moschifera in shape and appearance. Dorsal sepal sub-spatulate-oblong, sub-acute, over 2¼ inches long by 5 lines broad at the apex, very heavily barred with red-brown on a yellow ground. Lateral sepals spatulate-oblong, sub-obtuse, falcate and approximate at the apex, 1¾ inch long by 7 lines broad at the apex, coloured like the dorsal. Petals spatulate-oblong, sub-obtuse, strongly falcate, 1½ inch long by ½ inch broad at the apex, coloured like the sepals. Lip mobile, strongly 3-lobed, about 10 lines long. Side lobes triangular, acute, incurved, and nearly meeting at the apex, over ½ inch long, light yellow striped with red-brown, the basal angle lilac. Front lobe fleshy, compressed and keeled, with an oblong auricle over a line long on either side of the base, bifurcate at the apex, the lower tooth short and fleshy, a line long, the upper subulate, acute, sub-erect, 3 lines long; base of the front lobe light yellow, rest red-purple; crest consisting of an erect, oblong, dorsally-compressed callus, 2 lines long, situated at the base of the front lobe, and terminating in a short, acute tooth at either angle, white with a few purple spots at the apex. Column very stout, 5 lines long, lilac-purple in front and at base behind, reddish-purple at the apex. Native of Annan. *R. A. Rolfe.*

many leaves. A branch of the tree grafted on Citrus triptera and kept in the coldest and dampest place in the garden survived 14° of frost without losing its leaves. Other plants of the hybrid having some trifoliolate leaves with winged petioles, and others trifoliolate leaves with bare petioles suffered no injury from the frost. On the other hand certain hybrids with entire leaves were injured by 12°, and died from 14° of frost, while the fruits hung frozen to the trees. Such extreme temperature is rare, so that the new hybrid may be considered hardy in the ordinary climate of France. Those plants that differ most from C. triptera are least resistent. Their entire leaves (fig. 167, C) are like those of the ordinary Orange C. aurantium; the trifoliolate leaves being, as before observed, mostly evergreen and hardy (see fig. 167, A, B). There seems every reason to hope that hardy evergreen Oranges with edible fruit will soon be brought into cultivation. *E. A.*

[This Orange is the subject of a coloured figure in a recent number of the *Revue Horticole*, and to its editor, M. André, we are indebted for the opportunity of giving the accompanying illustrations. ED.]

THE ROSARY.

WILD ROSES AT KEW.

WHEN I term the Roses now growing so luxuriantly near the pagoda in Kew Gardens, "wild," I mean to convey the idea that they are growing wild rather than under ordinary garden culture. A special reason for drawing attention to these Roses just now is that about the end of the month the bulk of them will be in glorious bloom. The broad dell in which they are growing is near the pagoda, and as it will soon be one of the most interesting as well as beautiful objects in the Gardens, it would be a misfortune for any lover of Roses to miss it. Ample evidence of late has been furnished that Rose-growing in, gardens is now less limited to Teas, H.T.'s, and similar large-flowered or exhibition varieties and that what are commonly termed garden Roses are very popular. The Rose dell at Kew furnishes a fine illustration of the semi-wild manner in which these Roses should be grown, and the Kew authorities merit special thanks for furnishing so large and beautiful an example, and specially so because it is in a spot where everyone may see it. Entering the Gardens from the Richmond Gate, the dell is to be found immediately to the right of the pagoda. It was originally slightly excavated, the soil being used to help form broad raised banks, and these banks are now almost throughout covered *en masse* with Roses. The dell is some 100 yards long, and the grass footway 12 feet wide. It is partially winding, and seems to be an ideal place for forming a semi-wild rosary.

Some few varieties have been flowering for two or three weeks, notable amongst them being Paul's Carmine Pillar, rich in bloom and in colour, and a pretty pink, cluster, very free-growing Rose, The Dawson, a sort of preliminary to Dorothy Perkins, which was many years ago raised from crossing Rosa multiflora with General Jacqueminot. The "General" is not there, but just across the broad grass walk that runs so finely all up the gardens, is a big clump of R. multiflora with its almost bramble-like small white flowers. A big clump of the old Amadis is also in full bloom. Crimson Rambler is a huge mass but not yet open, neither is Dorothy Perkins, though in luxuriant growth. Among others may be noted Rosa moschata, R. blanda, Fellenberg, R. lutea (only recently planted, but which will in time be a brilliant feature), R. spinosissima, Maude's Triumph, South Orange Perfection (both much alike and of Wichuraian origin), Jersey Beauty, and R. Wichuraiana, as an edging. There are many lesser-known varieties, all of which should be seen by those who, having space and a slightly shaded position, would like to grow Roses in this semi-wild form, as Roses evidently like to be treated. The planted banks on either side of the dell vary in width from 15 to 30 feet, and on their raised surface in some places old tree stems and stools have been placed, as over such objects these free-growing Roses delight to ramble. No doubt another year some newer varieties, inclusive of the beautiful Lady Gay, will be added to the collection, for Kew evidently likes to be up to date, a detail of management which merits all praise. There are other garden Roses growing just across the broad grass walk, but these have been treated as border plants. The dell Roses now are a revelation of what Roses can be. *A. D.*

COLONIAL NOTES.

JAMAICA.

THE May number of the *Bulletin of Agriculture* is mainly taken up with the subject of Cotton and its cultivation, but there is also an excellent article on the Raffeisen Agricultural Banks, by means of which cultivators can borrow on easy terms, the money being supplied by other cultivators on the co-operative principle, and safeguards being afforded against loss or fraud.

THE MALAY STATES.

In the March number of the *Agricultural Bulletin of the Straits Settlements* Mr. Ridley identifies the "Kumus" timber, so highly prized by the Malays, as Shorea ciliata, one of the Dipterocarps. It furnishes excellent timber for railway sleepers and house construction.

TRANSVAAL DEPARTMENT OF AGRICULTURE.

The Annual Report of this Department for 1903-4 is now published. The division of Botany and Agrostology, under Mr. J. Burtt-Davy, has been busily engaged in seed and plant distribution. Attention has been paid to poisonous plants, pasture plants, weeds; plant-diseases have been investigated, and many specimens collected for the herbarium. As regards the Forestry division, Mr. C. E. Legat mentions the great lack of trees and shrubs, which are much needed, not merely for timber but for ornament, shelter and fuel. Active measures are being taken to amend matters. The division of Horticulture will in future pay much attention to the question of fruit culture. The area under crops has been much increased; the produce on the whole was very good, and the harvest the best for years. Mealies, Kaffir Corn, and Potatos were the principal crops sown. An evident disposition to test new crops was manifested. The Report is, on the whole, entirely favourable.

The Week's Work.

THE ORCHID HOUSES.

By W. H. YOUNG, Orchid Grower to Sir FREDERICK WIGAN, Bart., Clare Lawn, East Sheen, S.W.

Long-stemmed Cattleyas of the C. guttata type, C. bicolor, C. granulosa, C. Schofieldiana, C. intermedia, C. Harrisonæ and C. Loddigesii, are not amongst the easiest of Cattleyas to manage, but they are deserving the most careful cultivation. Members of the first four species need the warmest and driest position afforded in the Cattleya-house, and the rooting materials should be kept moderately dry until roots appear at the bases of the new growths. At this period fresh surface material may be applied, and should any plants have overgrown their receptacles repot them. Use clean pots and half fill them with drainage material. For placing about the roots use good turfy peat two parts, and sphagnum-moss one part, adding a small portion of Oak-leaves as the work proceeds, and surfacing with chopped sphagnum-moss. When the plants are making roots keep the materials and surroundings moist, but, should dull weather prevail, carefully avoid wetting the new growths. Free ventilation is essential, together with a good share of light and natural heat when obtainable, but draughts should be prevented. C. intermedia, which is often imported along with Lælia purpurata, may be grown under similar conditions to that species, a central position in the house suiting it well, but as it possesses more slender pseudo-bulbs a less protracted drought should be permitted during the resting period. A liberal supply of water and atmospheric moisture is needed when the plants are growing actively, and any needful potting should be done as soon as the flowers are past, for then new roots appear. C. Harrisonæ and C. Loddigesii are almost identical, yet culturally C. Loddigesii appears to enjoy a higher temperature than its ally. These two species thrive well if decaying leaves are included in the compost, though in that case extreme care in watering is necessary. Let repotting or resurfacing be done when new roots are expected from the young pseudo-bulbs. A long dry rest is needed after root-action has ceased.

Cool-growing Dendrobiums.—A very pretty sight is a well-flowered plant of D. Falconeri, when fixed in a small pan and allowed to hang downwards. The plant should be suspended near to a ventilator, in a position of moderate shade, where it can be syringed several times each day during growth. A high temperature is needed during day, but at night with ventilation the plants like a low temperature. The hybrid D. Venus also grows in a cool intermediate temperature, but should not be given a position near to the ventilator. Afford water in abundance during growth if the plants are in baskets having only a small quantity of material about the roots, but allow moderately dry conditions when growth has ceased. D. Jamesianum, D. infundibulum, and D. longicornu, each of which produces good white flowers, succeed well in baskets suspended in a cool, well-ventilated house that is not heavily shaded. Having now done flowering the plants will make growth, and may be syringed several times during the day; when root-action occurs keep the base well moistened. Extremes of heat with free ventilation at night appear to suit these plants during the summer months. D. Cambridgeanum also grows best under similar conditions, though, if anything, much drier surroundings are advisable when the plants are at rest. D. Kingianum thrives when suspended near to the roof glass of the cool house, and needs very few direct waterings, except just when rooting freely. Atmospheric moisture alone will keep the plant in proper condition throughout the winter.

PLANTS UNDER GLASS.

By A. BULLOCK, Gardener to E. J. WYTHES, Esq., Copped Hall, Epping, Essex.

Creeping Plants.—Frequent attention is needed to prevent the growths of vigorous creepers becoming entangled, and every opportunity for tying-in or cutting-out as the case requires must be taken. A little time spent each morning before the sun becomes too powerful may keep the work well in hand. Among some of the very vigorous growers, such as Passiflora quadrangularis, P. edulis, Vitis Voinieriana, Hexacentris mysorensis, Solanum Wendlandi, &c., grown in temperate houses, a good deal of thinning out is very necessary, and the work should be done frequently, for otherwise the plants quickly get out of hand. Heavy syringings overhead with clear water, or better still the use of a hose-pipe for the purpose, will be necessary to keep the plants free from red-spider and other pests, and a weekly fumigating with XL-All Compound is also very beneficial. Solanum Wendlandi, when grown together with Passiflora racemosa, is very effective, but is subject to attacks of mite, and frequent syringing with Quassia-extract should be given to counteract the evil. An examination should be frequently made for slugs among Lapagerias, and strong growths proceeding from the base of these plants should be protected with a band of cotton-wool, which needs to be replaced when it has become wet. Lettuce-leaves laid down towards dusk, and examined later with the aid of a lamp, afford the best method of capturing the slugs. Give the plants a good soaking of diluted liquid from the farmyard once a week.

Cassia corymbosa.—When once established, this plant makes very vigorous growth and fills a large space. Its bright golden-yellow-coloured flowers are produced in abundance, and for a cool greenhouse or corridor are very effective. It should be planted out in a rich compost of loam, leaf-soil and silver-sand. The present is a good time for planting.

Zonal Pelargoniums.—Cuttings rooted in spring for flowering during the winter months should be ready for potting into 5 or 6-inch pots. Before plunging the pots to the rims in ashes fully exposed to the sun during the summer, they should be stood in a cool frame for a week, by which time they will have begun to root into the new soil.

Cinerarias and Primulas.—Pot off young plants as soon as they are ready and place them in cool frames under a north wall or hedge where they can enjoy the benefit of full light free from the sun's rays.

THE FLOWER GARDEN.

By W. A. Miller, Gardener to Lord Henry C. Bentinck, M.P., Underley Hall, Westmoreland.

Aster acris.—The staking of this blue Starwort must be done carefully in order to obtain the best effect. Apply plenty of sticks, and "sling" some of the shoots between the supports. A little time and patience will be well repaid by a mass of colour, which has been aptly termed a "poem in flowers."

Hollyhocks need liberal cultivation, and will then be less liable to disease. Destroy any infected foliage, and encourage the plants to grow by affording them abundant waterings, and by working the Dutch-hoe frequently in dry weather to help to conserve moisture and check weeds.

Pinks may now be propagated by "pipings." Prepare a frame and put into it some sandy soil, also a layer of sand on the surface. Choose sturdy growths three or four joints long, and dibble them in firmly. Afford water. Keep the atmosphere close and provide shade from bright sunshine until the "pipings" have made roots, then gradually inure them to exposure.

Liliums.—In affording supports to these, be careful to thrust them into the soil at a good distance from the stem, in order to avoid injuring the bulbs. Apply a top-dressing of rotten cow-manure over the roots, and afford copious waterings during dry weather.

Sweet Peas require to be watered in dry weather; and if the plants need a stimulant, mix a pinch of sulphate of ammonia or nitrate of soda to each canful of water, or apply weak liquid from the farmyard. Do not allow water that contains manure to touch the foliage.

Shrubberies.— Apply the dutch-hoe over the ground amongst shrubs. If any Conifers have lost their leaders tie a strong stick to the stem, and having selected a likely shoot to form a new leader tie it to the stick. Encourage this leading shoot to grow as quickly as possible by taking away the points of other adjacent shoots. Remove cones that may be forming on young trees of Abies nobilis, &c.

Wall Gardens are now at their best, and require frequent waterings. The following are some of the plants in flower:—Antirrhinum glutinosum, A. sempervirens, Campanulas, many Dianthus neglectus, D. plumarius annulatus, and others; Erodium Manescavi, E. macradenium, E. chamædryoides, Geranium in variety, Helianthemums, Heuchera sanguinea, Hippocrepis comosa, Linums, Linaria anticaria, Onosma tauricum, Thermopsis montana, Verbascum densiflorum.

Miscellaneous. — Wallflower and other seed-beds will require frequent waterings in dry weather to assist in the germination of the seeds. Aster Thomsoni should be propagated now, also Androsace lanuginosa. Sow seeds of Meconopsis integrifolia.

THE KITCHEN GARDEN.

By W. Fyfe, Gardener to Lady Wantage, Lockinge Park, Wantage.

Celery.—The earliest plants will now be growing rapidly. Promptly remove any suckers that appear. Place round each plant in good time a piece of matting, in order to retain them in their natural form and prevent the outer stems and leaves from falling away, with the result that they would eventually have to be removed because of their broken and damaged appearance. If Celery is required for show purposes in August, careful attention is necessary in the matters of watering and feeding and to keeping the plants free from insect pests. Finely-powdered lime is the best preventive of damage by slugs, and should be applied early in the season and freely. The plants need not be earthed-up until six or seven weeks before the crop is required for use, but the work must be done carefully, and brown-paper collars applied from the ground-level to the extreme tips of the centre growth, closely surrounding these collars with fine soil to keep the stems in perfect darkness, which is so important in the production of well-bleached and tender Celery. Weak liquid-manure may be easily applied to the roots by placing a drain-pipe at intervals in a perpendicular position between the plants, into which the water can be poured. This may be done conveniently even when the ridge of soil has been fully formed, and it is essential always to guard against dryness at the roots.

Cauliflowers.—In planting Cauliflowers at any season it should be remembered that dryness at the roots is a cause of the production of premature "buttons" in place of well-developed specimens. Where the appearance of mulching is not objected to great advantage may be derived from it. The kind of material to use will depend in a measure upon the condition of the soil. Rich soil may be covered with short grass from the lawn, or any grass cut before the seeds develop. Mulching occasions very little trouble compared with that of watering, and the results from the mulching are even better, for if the ground is allowed to crack, the escape of moisture is considerable. Upon poor soil apply litter or fresh droppings from the stables. Before applying a mulch use the hoe freely amongst Beans, Peas, Globe Artichokes, &c.

Lettuce.—Make frequent and small sowings, and as soon as the plants are large enough to handle thin them out to the desired distance apart, which will vary according to the size of the variety. The best results at this season are secured irrespective of variety without transplanting. Sow the seeds in rich soil in order that growth will be free and of a succulent nature.

THE HARDY FRUIT GARDEN.

By W. H. Clarke, Gardener to Sir William Plowden, Aston Rowant House, Oxon.

Extension of Wall-trees.—If previous directions as to disbudding and stopping have been carried out, the shoots which have been left for extension will have made considerable growth, and should be secured by nails or ties, bestowing trouble with them that they may be trained perfectly straight and parallel with the shoots above and below them. Any weak shoots should be allowed to grow naturally for a time, only tying-in those which are very strong, and stopping these when they have made from 12 to 18 inches of growth. On trees which are making but moderate growth the shoots may be tied-in their full length. The system of extension necessary to the training of the Peach, Nectarine, and Morello are the same. Shoots growing from the base of the old wood should be trained-in where required. Such shoots will furnish fruit-bearing wood where the trees are disposed to become bare.

Pears and Plums.—Extension shoots upon some horizontally-trained trees, as for instance Beurré Dubuisson, Marie Louise, and Williams' Bon Chrétien, &c., may be allowed to grow their full length without fear of the back buds becoming dormant, but upon other varieties the leading shoots may be stopped when 15 to 18 inches long. In the case of horizontally-trained trees which are extra vigorous, stop the leading shoot when 12 inches long; this will force the three top buds into growth; two of these may be trained at right angles to form another tier of branches, with the leading shoot to be trained upright as before. By this means a tier of branches will be formed this year, which in the usual practice would not be the case until next season. Trees now growing in the open but which will be trained should have all the superfluous growths cut clean away, and a foundation made for the tree to be trained on by driving three upright stakes firmly into the ground close to the tree, and tying to these three or more light Bamboo-cane "braces" in an horizontal position. To these the shoots may be firmly tied, securing them from time to time as growth proceeds.

American Blight.—Where old Apple orchards are in close proximity to fruit plantations are infested with this pest it is always sure to cause endless trouble. If the blight is present it can always be found about the buds of last season's "worked" trees, or about the callused parts of trees grafted this spring. Gishurst Compound Soap used with sweet-oil well rubbed into the affected parts will destroy the pest. When the foliage is infested the above insecticides applied by means of a syringe will be effective after repeated use.

FRUITS UNDER GLASS.

By F. Jordan, Gardener to Dr. Corbet, Impney Hall Gardens, Droitwich.

Peaches and Nectarines. — Syringe vigorously each day those trees which have been cleared of fruit. It is essential to keep the foliage clean in order to secure the proper maturing of the wood for affording next season's crop. Ventilate the houses to the fullest extent, and if the roof-lights can be removed so much the better. Keep the trees thoroughly well supplied with water, and apply liquid-manure to old trees or others that require extra feeding. Pressure of work in other departments at this season is sometimes the cause of fruit-trees being overlooked when the fruits have been gathered, and the soil about the roots becoming too dry the flower-buds fall from the trees at a subsequent period. American varieties, such as Alexandra, will succeed better if afforded a light shade to prevent the wood from getting over-hard, especially in houses of which the supports are of iron, or in the case of trees the foliage of which has become thin from the attacks of red-spider or other causes. Keep houses which contain ripe fruit moderately cool by free ventilation day and night. Examine the trees daily when the fruits are cool, gather carefully all that are ripe, and place them on a soft surface in a cool well-ventilated fruit-room until required for use.

Succession trees should be syringed twice daily, the first operation being carried out shortly after six o'clock in the morning. If the roots are inside the house afford them an abundance of water and liquid manure over the mulch previously recommended. Ventilation must be employed liberally by day and by night. Expose to the sun's rays any fruits which are approaching to a state of ripeness.

Late trees.—Tie down the shoots and keep the laterals pinched, allowing fully 6 inches of space between each shoot. Then thin out the fruits, and apply a mulch of good stable manure over the borders inside and out. Ventilation and watering are just as necessary for these trees as for earlier ones. Elevate all pendent fruits by placing pieces of lath under them. If it is necessary to retard the crop, let it be done now by much ventilation, rather than later by having to shade the trees.

Newly-planted Trees should be carefully trained and any gross shoots stopped to obtain a proper balance of growth. Employ another light fumigation if green-fly has not been thoroughly exterminated.

Japanese Horticultural Society.—The May number of the Journal of this Society is an elegant production, containing articles on Tulips, Peaches, Psilotum triquetrum, &c. Paper and print are excellent, but we are not in a position to judge of the merits of the articles.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 41, Wellington Street, Covent Garden, W.C.

Special Notice to Correspondents.—*The Editor does not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editor does not hold himself responsible for any opinions expressed by his correspondents.*

Newspapers.—*Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.*

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, June 26 — Isle of Wight Rose Society's Exhibition at Ventnor.
WEDNESDAY, June 28 — Richmond Flower Show. Southampton Flower Show (2 days).
THURSDAY, June 29—Colchester Rose Show.
FRIDAY, June 30—Royal Botanic Society, Lecture.

SALE FOR THE WEEK.

TUESDAY NEXT—
By Protheroe & Morris, the whole of the Greenhouse Plants, Bay Mare, Van, Carts, Tools, and Effects, at Bedford Nursery, Haverstock Hill, at 12 o'clock.

(*For further particulars see our Advertisement columns.*)

Average Temperature for the ensuing week, deduced from observations of Forty-three Years at Chiswick —62·4°.

Actual Temperatures:—

London.—*Wednesday, June* 21 (6 p.m.): Max. 71°; Min. 57°.

Gardeners' Chronicle Office, 41, Wellington Street, Covent Garden, London.—*Thursday, June* 22 (10 a.m.): Bar., 30·4; Temp., 73°. *Weather*—Fine, with bright sunshine.

Provinces.—*Wednesday, June* 21 (6 p.m.): Max. 71°, E. Coast of England; Min. 58°, N.W. Coast of Scotland.

The New Chiswick. Bearing in mind the history of the Royal Horticultural Society in this the beginning of its second centenary, we are inclined to think that for once fortune has "come with both hands full," for were not the Hall and the garden both secured in one year? Well may the Society say, "Fortune and I are friends." A tablet in the Lindley Library records the generosity of Baron Sir Henry Schröder; a portrait in the new Council-room at Wisley reminds us of the munificence of Sir Thomas Hanbury. The foundations having been securely laid, it is for the successors of these two benefactors to make the most of their advantages, to supply deficiencies, and to bring the Society abreast of modern requirements. A visit to Wisley at this season will show that the Council is alive to its responsibilities in these matters.

The new garden is a little difficult of access, but is delightfully situated. Doubtless in time the journey will involve a smaller expenditure of time and money than is now necessitated. Be that as it may, visitors are already numerous. The drive from Weybridge on a June morning, across heaths and commons glowing with the bright flowers of the Broom, and adorned with the stately blooms of the Foxglove, through leafy woods and endless plantations of Scotch Pines exhaling delicious fragrance, is a thing to be grateful for. Traces of the frost on May 22 were everywhere visible on the Oaks, and specially on the Sweet Chestnuts grown as coppice wood. Rhamnus frangula, by the way, a tree that one does not often see, is here abundant and unhurt by the frost. In the woods children were met laden with sacks. Curiosity being raised as to the contents of these receptacles, enquiry was made, when the answer came "Co-nies." Evidently the "feeble folk," usually so called, were not intended, but Pine cones, collected for fuel! It was some time before we realised what the word pronounced in two syllables meant! But we are lingering in the woods, which is not unnatural, seeing that the garden is actually in the woods. The original enclosure is, with great appropriateness, left as it was in the time of its former proprietor, the late Mr. G. F. Wilson. It occupies a sheltered ravine, the sides of which are densely wooded, whilst the centre is diversified by low mounds and undulations clothed with an endless variety of shrubs and herbaceous plants.

In a comparatively open space is a newly-formed rockery in full sun, and at the bottom of the slope is a pool crossed by a rustic bridge, filled with aquatic plants, and bordered with Japan Irises, Primula japonica, P. rosea, Ferns, and other plants adapted to the situation. The noble foliage of the Gunnera had been injured by the May frost, but the damage was speedily concealed by new growths. Elsewhere are other pieces of water covered with brilliant Water-Lilies and Villarsias. The flash of the kingfisher may be seen as he darts across the surface of the water. No sound of intrusive "motor" is to be heard, but the croak of the bull-frogs and the call of the cuckoo are not bad substitutes. More melodious sounds are emitted by the nightingales and other songsters, for whose safety and convenience provision is made. In the wood which borders the central ravine Rhododendrons, Azaleas, Camellias, Kalmias, Bamboos, Tree Ferns, New Zealand Flax, and flowering shrubs in great variety are met with. Towering up among these are patches of Lilies, such as L. Szovitzianum, L. rubellum, and the noble shafts of L. giganteum. Beds of hardy Cypripediums, of Ixias, of Shortia, of Epigæas, of Vacciniums and Pernettyas, and other choice subjects cluster at the base of the trees, and give no sign of their exotic origin. In spring Narcissi, Scillas, Muscari, and other bulbous plants by the thousand are to be seen, and Cyclamen in their season. In another quarter the eye is attracted by the profusion and beauty of the Tree Lupins in varied colours.

It is, however, quite impossible to do more than generally indicate the nature of the contents of this garden, and to show that at all and any season there will be found much to interest and charm the plant-lover. Generally on visiting a garden one endeavours to see what was the purpose which the designer had in view, what particular requirements, decorative, scientific, or utilitarian, are provided for, what individual tastes and fancies indulged in. In this case it is not a garden in the ordinary sense—there are no lawns, no flower-beds, no terraces, not many walks. It is not even a "wild" garden as commonly understood, but a wood in which clearances have been made here and there, and stocked throughout with the most select, the most interesting, and the most beautiful hardy plants. These are allowed to grow, not in any definite order, but where they can best establish themselves. Imagine the rock-garden at Kew transferred to the middle of the pleasure-grounds, and some idea may be formed of the general character of the original garden at Wisley. This is the pleasaunce, as our forefathers would have called it. It recalls remembrances of the Wilderness Walk at Chiswick, which half a century ago was such a delightful feature of that historic garden.

The mention of Chiswick reminds us that Wisley is destined to replace that old experimental garden so rich in memories, so dear in its associations. There are at Wisley, besides the "garden of plants" that we have mentioned, acres to spare in every aspect, with soil varying from a very light sandy loam to stiff clay, with an adequate water supply and an unpolluted atmosphere which fogs of the London type do not penetrate. Here then there is space for trial-plots for an experimental garden, for plantations of fruit trees, for an arboretum, for a research station. Associated with the trial-plots should be selections of the acknowledged best standard types of vegetables and fruits, correctly named, for purposes of instruction and of comparison with novelties, real or reputed.

The desirability of an arboretum is enhanced by the fact that the climatal conditions at Kew are becoming less favourable year by year, so that it is necessary to consider and, so far as possible, provide for contingencies some decades ahead.

As to the research-station, that, too, we look on as imperatively necessary. The Council is pledged to its formation; but, seeing how much it has in hand, and how much remains to be done, we must possess our souls in patience. In the meantime the ever-increasing losses from plant-diseases, and the endless questions of practical importance that turn up regularly, many of which could be solved in a properly-equipped station with a competent director, will, we trust, stimulate the Council to carry out its expressed promises at as early a date as possible.

In the meantime substantial progress has already been made. A commodious dwelling-house for the Superintendent, with a convenient council-room, has been erected. Other residences have been built for the staff. Seven span-roofed houses, running north and south, 100 feet long and most of them 30 feet wide, and three rows of pits, have already been constructed. These are eventually intended to be used as Peach-houses, Vineries, and for other purposes. They are substantial structures, admirably light, and with adequate provision for ventilation and heating. The whole is heated by a horizontal tubular boiler, with a second to be used in case of emergency. This part of the work was carried out by Messrs. Kinnell & Co. Some of the houses are at present used for Tomatos, one of which, "Carter's Sunrise" by name, is remarkable for its prolific habit. Another house is occupied with pot-Figs, thus carrying on the old Chiswick tradition. Veitch's Chelsea manure is found very effectual in promoting the root-growth of Figs, as was evidenced by specimens shown us.

A stone causeway runs in front of the the houses for their whole length. These stones have been trodden by generations of gardeners, for they formed the pathway on either side of the great vinery at Chiswick.

From lack of space, assuredly not of material, we must stop, not before offering our congratulations to the Council on the excellent progress that has been made by Mr. Wright and his staff. A fine opportunity is before them, and there is every appearance that the fullest use will be made of it.

The Gardeners Royal Benevolent Institution.

ONCE again we are privileged to record a successful Festival Dinner in aid of this most deserving Institution, a sum of £2,100 having been obtained for the relief of aged or infirm gardeners who are no longer able to follow their calling, and who are consequently in necessitous circumstances.

We have urged again and again that it is necessary for gardeners themselves to look to it that the amount contributed to the Fund in the form of annual subscriptions shall be increased in order that the Institution may become less dependent upon results obtained, mainly from outsiders, by special efforts such as the Festival, which source of income must always be more or less uncertain. But as the need for relief increases year by year it is likely that even when the subscriptions have been largely augmented there will always be a deficiency to be made good by special means of some kind or other. The Institution is, therefore, deeply indebted to such liberal and sympathetic patrons as the Duke of WESTMINSTER and others who preside at these annual dinners and contribute to the funds. As the Chairman pointed out in his speech at the dinner, the annual liability amounts to £4,000, and we know that it is impossible even with this expenditure to elect all the candidates who are deserving of assistance.

The dinner held at the Hôtel Métropole on June 16 was the sixty-sixth festival, and the Duke of WESTMINSTER, who presided, was supported by a large company of well-known horticulturists. On his Grace's right hand was Sir WALTER SMYTHE, and on his left Mr. HARRY J. VEITCH, Treasurer and Chairman of the Executive Committee, whose successful efforts on behalf of the Institution last year when he presided at the annual festival will be remembered gratefully for a long time to come.

Amongst the company present we noticed Messrs. A. W. Sutton, Leonard Sutton, W. Robinson, A. McKellar, W. Y. Baker, Geo. Monro, W. Barr, P. Rudolph Barr, Geo. Barr, P. Blair, N. F. Barnes, O. Thomas, W. Iceton, W. Crump, H. Williams, Geo. Norman, H. J. Cutbush, W. Cutbush, W. A. Bilney, J. Douglas, J. Walker, Geo. May, H. B. May, J. H. Veitch, Geo. Paul, J. Poupart, J. Assbee, H. Rides, W. Atkinson, Geo. Bunyard, G. H. Cuthbert, P. Kay, J. McIndoe, J. Hudson, J. Sweet, W. R. Alderson, &c.

The Duke of WESTMINSTER, in proposing the toast of the Institution, said that he was very gratified to be able to accept the invitation to be present, more especially as his grandfather had been President of the Institution for a period of twenty-one years. He said the charity was well worthy of practical sympathy. It had for its object the relief of those over sixty years of age who had formerly been employed in the different branches of horticulture, and also of their widows, who might, from old age or sickness, find themselves in distress and poverty. It now had on its pension list the names of over two hundred persons—one-hundred-and-twenty men in receipt of £20 a-year, and about ninety women receiving £16 a-year, making an annual liability of about £4,000, which had to be raised by voluntary contributions. We saw and enjoyed the results produced by the gardeners' industry, and few could be more fortunate in that respect that he was at his home in Cheshire. But the life of the gardener was not literally a bed of Roses. Nor were his gains great. He was a skilled workman who gave an infinite amount of pleasure to the community at large by his labour and ingenuity, and yet his wages compared very unfavourably with those of skilled workmen in other branches of industry. He thought that it was CHARLES DICKENS who said that gold and silver were well known to gardeners, not as a lining to their pockets, but by the colours of their fruits and flowers. Few gardeners could afford to lay by from their wages a sufficient sum to enable them to meet the rainy day or the inevitable advent of old age. He therefore commended the charity to their notice, confident that when its objects were more generally known further generous contributions would be forthcoming.

Mr. H. J. VEITCH, the Treasurer, responded. He said that including those elected in January last, there were now two-hundred-and-fourteen pensioners on the books, being seven more in number than at any previous time. At the last election thirty-two unsuccessful candidates remained, of whom some were blind and ten were more than seventy years of age. To meet the pensions alone a sum of about £4,000 a year was required, while the assured income was only £900 and the anticipated income from subscriptions £1,600. Of the pensioners now on the funds, two were over ninety years of age, fifty-nine over eighty, and one-hundred-and-ten over seventy. The whole expenses of management are paid out of the income from invested funds, therefore all contributions made now are available for purposes of relief. The Auxiliaries were doing excellent work, as might be inferred from the fact that he had been handed a cheque for £90 from the Worcester branch that night. Speaking of the Victorian Era Fund, Mr. VEITCH said that £160 was awarded from this fund last year. The Samaritan Fund was doing excellent service in providing temporary relief for candidates for election who were not subscribers. He deplored the losses by death the Institution had sustained, and mentioned the name of Dean HOLE, who always supported the cause "by his eloquence, seldom equalled and never surpassed."

Sir WALTER SMYTHE proposed the toast of "Horticulture in all its Branches," which was responded to by Mr. GEO. PAUL.

The Chairman's health was proposed by Mr. ARTHUR W. SUTTON, who in the course of his speech related some interesting details respecting the Duke's efforts to provide farms for such of the Cheshire Yeomanry who chose to remain in South Africa after the close of the war. His Grace bought twenty thousand acres of land, built suitable homesteads upon it, and has since sent out an expert in fruit culture to teach the settlers, and some of his best thorough-bred horses to improve the breed of horses there. He has also built a home for himself there, so that he can visit his tenantry from time to time. In replying to this toast, His Grace said that Mr. SUTTON had mentioned the lost jewels. As the gentlemen present were gardeners he might say that the jewels were "planted" in a field near Cambridge, and that they "came up" wonderfully quick.

As we have stated already, the amount of the contributions exceeded £2,100. The principal donations are announced in our advertisement columns.

NATIONAL CHRYSANTHEMUM SOCIETY.—We are asked to state that the annual outing is fixed for Monday, July 17. The arrangements for the day consist of a water-trip from Staines to Windsor, &c. The programme sets forth that the party will be conveyed from Paddington to Staines by Great Western Railway, the train leaving at 9.55 A.M. One of the largest launches on the river will take on board the company at the Bridge House landing-stage. The water journey to Windsor will occupy about two hours. Dinner will be served in the Victoria Hall of the White Hart Hotel at 1.30 P.M. It was hoped that a visit might have been made to some portion of the Frogmore Gardens during the afternoon, but owing to extensive alterations no orders to view are being issued this year. In lieu thereof, arrangements have been made for drives through Windsor Park, the vegetation of which will be seen at its best. Tea will be served in the White Hart Hotel, Windsor, at 5 P.M., and the launch will start on the return journey to Staines soon after six o'clock. The return train will leave Staines at 8.55. The charge for the day is 10*s*. 6*d*. Tickets can be obtained from the Secretary, Mr. RICHARD DEAN, 7, Marlborough Road, Ealing.

THE "HENRY ECKFORD" TESTIMONIAL.—The contributions to this Fund up to the evening of June 17 amounted to 812 shillings.

THE RICHMOND HORTICULTURAL SOCIETY.—We are informed by the Secretary, Mr. W. J. COOK, that the annual show to be held on Wednesday next promises to be a successful event.

PARIS EXHIBITION.—A Gold Medal was awarded to *Le Jardin* and to the *Dictionnaire Iconographique des Orchidées* of M. GOOSSENS, of Brussels.

EDGAR SANDERS, THE "DEAN OF CHICAGO HORTICULTURE."—We often have occasion to note the frequency with which men of British origin have come to the front in American horticulture. We suppose in time American-born cultivators will naturally displace them, but even so many of them will be of British extraction. In any case it is pleasant to read of the success of our countrymen. Among them none is more respected than Mr. SANDERS, who began his career at Felbridge Park and Tilgate House in Sussex. He was a member of the Stoke Newington and Clapton Gardeners' Society as early as 1846, and belonged to mechanics' institutes when he could not find gardeners' clubs. After "five weeks' tossing" he landed in New York in April, 1853, and soon obtained occupation enough to save money sufficient to purchase land near Chicago in 1857. Here he started as a nurseryman and florist, and in 1867 established the first "flower-store" ever opened in Chicago. In spite of a disastrous fire in 1871, he continued his business, entered public life, and rendered good service to the municipality. In America he followed his old habit of founding or of attending horticultural clubs and societies, was the first President of the American Association of Nurserymen, and was for a long time connected with the *Florists' Exchange*. He records, or the *American Florist* does for him, that "he always dabbled some as a scribbler," a colloquialism that would hardly pass the editor's scrutiny on this side of the ocean! His early effusions were sent to the *Gardeners' Chronicle*, and he still remembers how proud he was to see his name in print. Since that time he has been almost continuously connected with the American Press, though we are sorry to say that he, like so many of his associates, seems to think that once they have crossed the Atlantic that their communications will not be welcomed here—at any rate, we see them rarely.

The Ghent Quinquennial of 1908.—Our friends at Ghent have already announced that they are preparing to celebrate, in April, 1908, the hundredth anniversary of the foundation of the Société Royale d'Agriculture et de Botanique. May their enterprise and forethought be as fertile in result as their previous efforts have been! We cannot say more.

The Barnham Fruit Industry and the Railway Company.—We take the following extracts from the *Fruit, Flower and Vegetable Trades' Journal* of June 10:—"There has grown up at Barnham during the last twenty years a considerable horticultural trade. On about 160 acres of land there are employed about 120 hands, taking in wages about £5,000 per annum, and producing about £15,000 annually. Under agricultural treatment the same land would probably employ two men, pay about £84 in wages, and produce, at the outside, £1,000. When we come to facilities for markets we find, if some new rules are observed, that the local grower will have in the future to dispatch his produce for through conveyance for the northern markets at 11.20 A.M. each day. The foreign producer, shipping to Southampton, can have his produce put on the same markets by a train leaving Southampton at 5.15 P.M. What these six hours mean to packers of delicate perishable produce only those connected with the trade know. What they mean in *£ s. d.* I shall state later. The 'hub of the universe' to the market grower is Covent Garden. Well, we find that to ensure our produce being delivered there for the early market on the following day we have to dispatch at 12.18 P.M. on the previous day. Thus to reach a market 65 miles off we have to send off sixteen hours before the market opens, though the foreigner can have his goods conveyed from Dover, Newhaven, or Southampton in at most twelve hours, and sometimes in as little as five. It is not uncommon for produce reaching Covent Garden in the afternoon of the day of packing to make £8, £10, and even more per ton than the same produce the following morning. It is practically impossible for us to put our goods on the market on the day of packing, thanks solely to local railway conditions. Owing to the competition of the northern lines for our traffic, we can actually (at present) dispatch goods from Barnham hours later than we can to Covent Garden, and still reach the northern markets in time. Foreign produce passing through the 'Sunny South' must be competed for by railway companies. Consequently it is well treated. Home produce (severely handicapped by the foreign), which keeps English homes, enriches the nation, and employs the population on the land, not being competed for, can, it seems, be treated with neglect."

A Pinetum at Norwich.—A local journal contains details of a plantation which "is really a magnificent pinetum such as few towns possess." It runs parallel to the old city wall in its course along the chapel field. The selection of trees, representing forty-five varieties, has been made by the Superintendent, Mr. J. Ward, who has caused labels containing details as to the names, native country, uses, &c., to be affixed to the trees.

Presentation to Mr. Herbert T. King, of Coggeshall.—At Coggeshall, recently, a presentation took place, the recipient being Mr. Herbert T. King (head of the firm of Messrs. John K. King & Sons, Royal Seed Growers, of Coggeshall and Reading), on his forthcoming marriage with Miss Ella Marie Rosa Crindland, of Westbury-on-Trym. The presentation took place in one of the large seed warehouses of the firm, which had been prettily decorated with flags, &c. The presentation had been subscribed to by all the *employés*, nearly 100 of whom were present; many from the seed farms at Great Tey and Chappel being unavoidably absent. The proceedings were of the most gratifying character.

"The Municipal Parks, Gardens, and Open Spaces of London. . . ." By Lt.-Col. Sexby. (Elliott Stock.)—We welcome a "cheap edition" of this particularly interesting book. It is well written, well illustrated, and full of matter that appeals to the born cockney, the London resident, and his visitors the country cousins. It deals with the parks and gardens under the control of the London County Council, but does not include the parks belonging to the Government or to the City of London. Many a Londoner will be surprised at the number and extent of his gardens, and at the varied historical associations connected with them. As we have already called attention to the original edition we need now only remind the reader that a new edition is at his service.

Royal Scottish Arboricultural Society.—The contents of the "Jubilee" volume of Transactions published this year are particularly interesting. In addition to articles relating to the history of the Society and to the progress of Forestry in general, there are detailed accounts of the visits of the members of the Society to France, where various State forests were inspected. German Forestry also occupies a considerable part of the volume. The contents are so varied that no extract would convey an adequate idea of them. We must content ourselves with calling the attention of those of our readers interested in the subject of Forestry to this publication, in the full assurance that they will find much of interest in its pages.

The "Gardeners' Chronicle" of America.—This is a newly-established journal, devoted to the interests of amateurs and their gardeners, published in Jersey City at ten cents per copy, and adopted as the official organ of the National Association of Gardeners, the objects of which are to "unite in one body for mutual and benevolent benefit and protection all professional gardeners of good moral character." Full details are given as to the objects and management of the Society, details which might profitably be studied by the promoters of the analogous British Society. The journal is well got up. We wish our namesake every prosperity.

Publications Received.—*Sugar-Cane Experiments in the Leeward Islands.* Report on Experiments at Antigua and St. Kitts, 1903–4. Part I., Experiments with Varieties of Sugar-Cane. Part II., Manurial Experiments. Issued by the Imperial Department of Agriculture for the West Indies.—From the New Hampshire College Agricultural Experiment Station. *Bulletin* 119, Forestry. I., The Value of Native Pine Seedling: II., Experiments; Digging, Packing, and Transplanting; III., Comparative Expense. Wild Seedlings, *versus* Nursery Purchased Stock. By F. Wm. Rane.—Board of Agriculture and Fisheries (Whitehall Place, London). *The Pine Sawfly*—We have received the following Leaflets from the Board of Agriculture and Fisheries, and our readers will note that the subjects therein treated have been repeatedly described and illustrated in our columns also. Leaflets 131, *Apple and Pear Scab*: No. 132, *Slugs and Snails*: No. 133, *Powdery Mildew of the Vine*; No. 134, *Apple Culture*; No. 135, *Mange in Cattle*: No. 136, *The Bulb Mite*; No. 137, *Potato Scab*: No. 138, *Pine Weevils.*—New Hampshire College, Agricultural Experiment Station. Bulletin 119. *Forestry*, by F. W. Rane.—From the Ontario Agricultural College Macdonald Institute: Bulletin 142, *Outlines of Nature-Studies*, by William Lochhead.—United States Department of Agriculture, Farmers' Bulletin No. 221, *Fungous Diseases of the Cranberry*, by C. L. Shear.—Michigan State Agricultural College Experiment Station. *Observations of Nodules on the Roots upon the Composition of Soy Beans and Cowpeas* by C. D Smith and F. W. Robison.—From the United States Department of Agriculture we have received, from the Bureau of Plant Industry, Bulletin No. 74: *The Prickly Pear and other Cacti as Food for Stock*, by David Griffiths; and Farmers' Bulletins, No. 213: *Raspberries*, by L. C. Corbett, and 215, *Alfalfa Growing*, by A. S. Hitchcock.

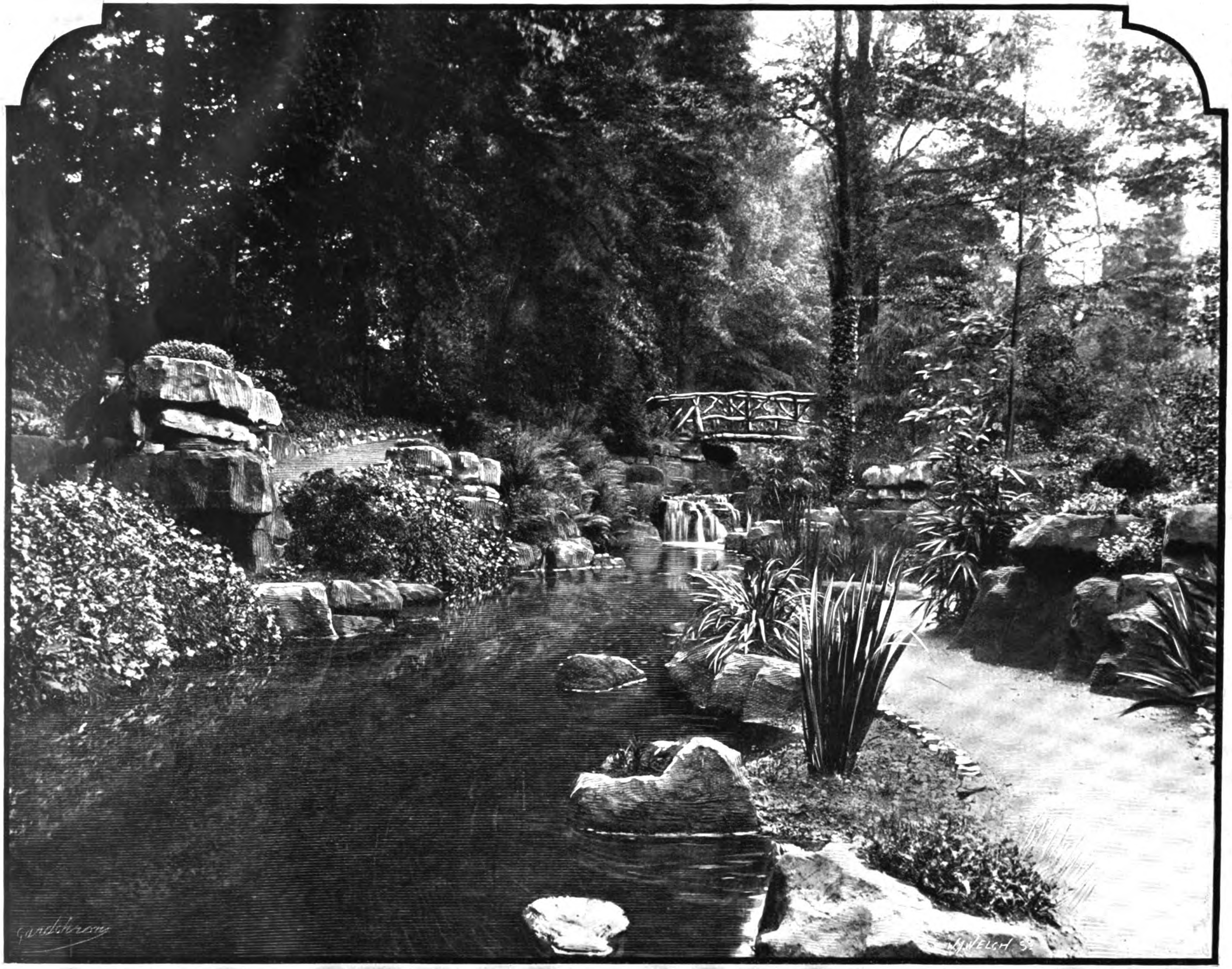
CHESFIELD, HAMPTON WICK.

[See Supplementary Illustration.]

Chesfield is one of those beautiful residences found on the margin of the river Thames sufficiently far removed from the bustle which goes on nearer the great city to ensure perfect quiet and freedom. Many of us are familiar with the lovely scenery on the Thames above Richmond; indeed, the beauty may be said to commence earlier with the peerless gardens at Kew, whose grounds are bounded on the north by the river's margin. The view in our Supplementary Illustration could easily be taken to represent a spot in some extensive woodland through which the pleasing stream in the foreground had made its way past jutting rock and over fallen crags. In reality the Beech and other trees shown on the left of the picture stand on the margin of the river's bank, which is included in the grounds of Chesfield though not shown in the illustration. Beautiful as the spot appears in our picture it seems even more so when visited, on a glorious summer day—a day on which the river was gay with merry-makers, and on which the cool retreat of the shady glen could be appreciated. The stream is an outlet of the water originally brought by Cardinal Wolsey to supply the Palace at Hampton Court, and is thus historically interesting. No doubt even in those distant times the banks were beautiful with native flowers and gay with bird life. Even now a stray kingfisher frequents the spot, and it is occasionally the haunt of the coot and hern, while the moorhen is a not infrequent visitor. The present owner, H. Trengrouse, Esq., has taken pains to conserve the wild fowl, and is endeavouring to establish a colony of wild ducks on the stream. The banks have been planted with suitable subjects, and of these not a few are species of British Ferns, the spot being an ideal one for these shade-loving plants. Osmunda regalis appeared quite at home, and was represented by many large specimens that looked the picture of health; so, too, did the Hart's-tongue, some of which were "crested" forms; the Male Shield Fern and the Lady Fern, the Spleenwort, Ceterach, and many others. Even the common Rush (Juncus communis) found a place, and many another British water and bog plant were included—the Water Iris (I. Pseudacorus the Willow Herb, Nymphæa lutea, Lycopodium clavatum (although this last-named was not doing well), Lysimachia vulgaris, the Meadowsweet (Spiræa Ulmaria), Figwort (Scrophularia nodosa), &c. In addition to these Alpine and hardy plants have been freely planted, and each jutting piece of rock-work forms a suitable pocket for a patch of Aubrietia, Arabis, Campanula, Veronica, Saxifraga, &c. Even the Ivy-leaved Toadflax (Linaria Cymbalaria) has not been overlooked, and is as effective in appearance as its exotic neighbours. Bamboos have been planted at intervals and are doing well, while the dwarf Conifers seemed now at their best with their new season's growths. Water-Lilies find a place in the stream in company with Nuphar luteum.

The rustic bridge shown in our illustration has recently been substituted for one of stonework, and from this spot the view is delightful. Near by is an elevation constructed of stonework that harmonises with the other rock-work, all of which has been designed and built by Messrs. Pulham in good taste. This structure is approached by tiers of stonework that have afforded scope for planting, and the best use has been made of the opportunity. Ferns are luxuriating, and an admirable selection of alpine plants furnishes the numerous "pockets" made for their reception.

The view from this point of vantage is exceedingly good. Beneath, landwards, is a small fruit garden, somewhat too shaded by the taller trees to furnish the best results, still there



VIEW IN THE GARDENS AT CHESFIELD, HAMPTON WICK, THE RESIDENCE OF H. TRENGROUSE, ESQ., SHOWING STREAM WITH ORNAMENTAL STONE WORK, ERECTED BY MESSRS. PULHAM.

were indications of fairly good crops of fruit. Across a well-kept and extensive lawn stands the mansion, a well-appointed residence built on an elevated terrace.

The view from this terrace is exceptionally good, and terminates in a stretch of the river Thames.

The grounds around are well furnished with trees, and borders of shrubs lend additional beauty. A very good specimen of Cedrus atlantica was noticed, just now at its best, with its young glaucous growths. A number of flower-beds have been formed at the foot of the terrace on which the house stands; these have just been furnished with their summer occupants, and will later on form a pleasing feature seen from the house. In one of the beds by the residence a large specimen of New Zealand Flax (Phormium tenax) is throwing up a fine inflorescence. Several Rhododendrons were in bloom, but the dry weather in May adversely affected the flowering of the majority of these shrubs.

The kitchen-gardens are well filled with vegetables, and several good flower-borders are now bright with herbaceous flowers, while there are several glasshouses, including a stove, vinery, greenhouse, and a range of Melon, Cucumber, and Tomato houses. The plants in the stove and greenhouse contain many reminiscences of their owner's visits abroad. There are Ferns, Osmunda sp., Thalictrums, &c., from the Falls of Minnehaha, and a fine specimen of the Papaya-tree (Carica Papaya) that is flowering at the present time. Of the remaining plants in the houses we may say there is a mixture of many things—Orchids, Ferns, Selaginellas, Begonias, Primulas, Gloxinias, Tacsonias, Passifloras, Cobea, Tydeas, &c.

HOME CORRESPONDENCE.

(The Editor does not hold himself responsible for the opinions expressed by his Correspondents.)

MECONOPSIS GRANDIS AND M. RACEMOSA.—Dr. Prain's valuable notes on the species of Meconopsis solve a mystery which has been bothering me a good deal. I have several times flowered M. grandis from seed kindly sent me some years ago by Dr. Prain. Unlike all other members of the genus in cultivation, save M. cambrica, M. grandis is a true perennial. It increases, however, very slowly, and though I have not watched sufficiently closely to be certain, I am inclined to think that flowering and seed-bearing one year involve absence of flowering the following season. But what has surprised me has been the wide disparity in the quality and colouring of the flowers. To such an extent does this reach that I have found it difficult to believe that they could come from a single species. Dr. Prain's note now makes it clear that the difference is a perfectly genuine and natural one, and in no respect due to the artificial conditions of culture here in England. The difference is a most remarkable one, and seems to extend beyond the flower colouring. Of five plants which bloomed here this spring, four had flowers of the vinous purple colour, correctly described by my old friend, the late Mr. Thompson, of Ipswich, and approximating in shade to that of the true M. nepalensis. In these four cases the plants were, and are, small, and the flower-stalks on which the blooms were borne were only a few inches high. This form is to my thinking quite without merit. The fifth plant, however, amply compensated for the disappointment occasioned by the other four. I am not going to try my hand at word-painting. It is quite enough to say that it is very beautiful indeed. Mr. Elwes happened to be here just before the petals dropped, and had the opportunity of seeing its fine iridescent blue. But the interesting point is that it differed from its fellows not only in the colour of its flowers, but in the size of the plant and in the great development (1½ to 2 feet) of the flower-stalks. Is it possible that the flower-colour is not fixed, but varies with the healthiness of the plant? I have a pan of seedlings raised from a plant which bloomed last year with particularly fine blue flowers. It will be interesting to see whether they all come true. I am glad to say that M. racemosa, which seems to have been a difficulty when previously introduced, does well here, flowering freely both out-of-doors and under glass. It is only a biennial, but it makes good seed which germinates readily. The flowers vary greatly. At their best they are of a very fine blue colour. *Arthur K. Bulley, Cheshire.*

MECONOPSIS GRANDIS.—I am pleased to see such a good illustration of the fine Meconopsis grandis in the *Gardeners' Chronicle* for last week; but, excellent as it is, a photograph cannot well do justice to a plant of so much beauty as this Meconopsis. I have seen it in bloom two years in succession in Edinburgh. Mr. Harrow is attempting to hybridise the species with some of the Papavers. *S. Arnott, Sunnymead, Maxwelltown, Dumfries.*

A USE FOR THE LABURNUM.—Mr. Simpson's reference to the Laburnum, p. 307, reminds me of a set of chairs that Mr. Ross, who for many years was dominie (schoolmaster) of an Aberdeenshire parish, used to be very proud of. They were made by himself of Laburnum wood, in his leisure hours, and were beautifully marked and polished. The wood I understood was procured from a fine row of trees that once grew by the side of the main road (where many still grow) about midway between Peterhead and Fraserburgh, and some four miles from the sea coast. *T. Coomber, The Hendre Gardens, Monmouth.*

FOREIGN SMALL FRUITS.—In the course of the interesting and suggestive notes upon this subject on p. 374, mention is made of several which I had under cultivation for seven or eight years, and it may therefore be worth while to record my experience. Raspberry Shaffer's Colossal, which has proved very satisfactory in America, was one of the varieties tried in the expectation that it might give some favourable results, but we never succeeded in obtaining more than a few fruits, which in quality fell far short of the praise bestowed upon them in the United States. In other respects it corresponded exactly with the description furnished by Professor Card. It is very strong in growth, the canes reaching 6 or 7 feet in height, of a proportionate thickness, bright purple in colour, well clothed with good foliage, and one of the most distinct of this group of Rubus. But though grown in several different soils, heavy, medium, and light, with and without stable or artificial manures, the plants rarely flowered well and still more rarely ripened their fruits. It is said to have originated near Scotsville, in Munroe County, New York, about 1871, and is considered "one of the most productive Raspberries known — an excellent canning variety, in quality not far behind the red Raspberries, and with a richness not possessed by them." Another Rubus included in the notes referred to is Newman's Thornless, which is classed amongst the hybrids between R. nigrobaccatus and R. villosus, amongst which Wilson Junior is also ranked. One American grower has stated that "it produces few thorns and fewer berries," which has been fully confirmed in my experience, with the addition that it throws up an enormous number of suckers. It will grow in almost any soil or situation, but its value as a fruit-yielding plant is insignificant compared with that of the common Blackberry or the useful R. laciniatus. Amongst the German Strawberries named in the notes is Koenig Albert von Sachsen, which has appeared in some British lists as King Albert. This I grew for some years, and a more worthless variety it would be difficult to find as regards its behaviour in this climate. The fruits are very pale in colour and amongst the softest known to me, for when ripe they could scarcely be gathered without crushing, and if a couple of pounds were placed in a basket the lower ones were always reduced to pulp. There are few of the American or Continental varieties of Strawberries which bear favourable comparison with British-raised seedlings, under the conditions prevailing here. The most satisfactory of the former that I have grown is Crescent Seedling, though the fruits are small and pale in colour, but they are produced in great abundance under good cultivation. Of the less well-known French varieties, Dr. Morère, La Constante, and Edouard Lefort have proved the best, taking all points into consideration. *R. Lewis Castle.*

SOCIETIES.

THE ROYAL HORTICULTURAL.[*]

JUNE 20.—There was a very fine display of plants and flowers at the ordinary fortnightly meeting of the Committees held on Tuesday last. Orchids were exhibited largely, and so many novelties were shown that the ORCHID COMMITTEE recommended awards including two first-class Certificates, four Awards of Merit, and four Botanical Certificates.

The FLORAL COMMITTEE recommended nine Awards of Merit to various new plants. Many interesting and effective groups of plants and flowers in season were contributed by members of the trade, very few being from amateurs. The Committee recommended as many as seventeen Medals.

No award to a novelty was made by the FRUIT AND VEGETABLE COMMITTEE, and there were few exhibits.

In the afternoon 140 new Fellows were elected, and a lecture on "Plants of the Bible" was delivered by the Rev. Professor Henslow.

It may be mentioned that arrangements have now been made by which visitors to these meetings will be able to obtain tea in the Hall between the hours of 3.30 P.M. and 5.30 P.M. The attendance on Tuesday last was rather less than usual, probably owing to the race meeting at Ascot.

Floral Committee.

Present: W. Marshall (Chairman), and Messrs. H. B. May, R. Dean, W. J. James, W. P. Thomson, W. Cuthbertson, Chas. E. Shea, R. C. Notcutt, Chas. E. Pearson, Chas. Jeffries, Geo. Gordon, Chas. Dixon, W. Bain, C. R. Fielder, C J. Salter, J. T. Bennett-Poë, Ed. Mawley, J. W. Barr, C. T. Druery, Geo. Nicholson, Jas. Walker, F. Page Roberts (Rev.) E. T. Cook, E. H. Jenkins, Geo. Paul, H. J. Jones, R. W. Wallace, R. Hooper Pearson, Chas. Blick, J. Jennings, and W. Howe.

Petræa volubilis.—A plant of this Verbenaceous twining plant was shown by Sir TREVOR LAWRENCE, Bart., Burford, Dorking (gr., Mr. Bain). The plant was in a 10-inch pot, and some of the racemes of purple flowers were produced from the old wood, and others on young growths several inches in length (Cultural Commendation).

Awards.

AWARDS OF MERIT.

Aster sub-cœruleus.—An exceedingly effective perennial Aster, which grows about 20 inches high. The flowers are 2 inches across, of perfect form, and bright mauve colour with yellow disc. The leaves are described as being somewhat similar to those of A. alpinus, but rather broader and more hairy. A. sub-cœruleus has been grown very recently in nurseries as A. diplostephioides, but this latter species has a purple centre in the disc, and is exceedingly difficult to cultivate, whilst A. sub-cœruleus appears to be very free, and a first-rate garden plant in every way. Shown by Mr. AMOS PERRY.

Impatiens Holsti.—A species resembling I. Sultani, but having vivid flowers of nearly scarlet colour. Suitable for cultivation in a greenhouse, and perhaps for bedding out-of-doors in warm weather. Shown by Messrs. H. CANNELL & SONS, Swanley.

Hemerocallis corona.—This variety of the Day Lily was raised by Mr. YELD, York, from H. flava and H. aurantiaca major. The flowers are golden, almost orange-yellow in colour, and many are produced on the cymose inflorescences. It is a good and very effective garden plant.

Iris "Neptune."—A very fine variety raised by Mr. GEO. YELD, Clifton Cottage, York, one of the parents being I. pallida. The flowers have large, broad, blue-coloured standards, and purple falls veined over a white ground at the base. From Mr. Geo. Yeld.

---

[*] Owing to the publication of the Index and the pressure on our space we are compelled to hold over our remarks on the details of the general exhibits until next week's issue. ED.

Herbaceous Pæony "*Her Grace.*"—A very fine double flower of very commendable form, and in colour a bright, pure shade of pink.

Herbaceous Pæony "*La Fiancée.*"—Of almost equal good form to that of "Her Grace," but pure white in place of pink. Both varieties were shown by Mr. R. H. Bath, nurseryman, Wisbech.

Rodgersia pinnata alba.—Some flowering growths of this new Rodgersia were shown by Messrs. James Veitch & Sons, Chelsea. They bore large panicles of pure white flowers, which would make the plant a very effective dwarf shrub for planting on the banks of streams and in similar places (see note on the species Rodgersia in *Gardeners' Chronicle* for August 23, 1902, p. 131).

Streptocarpus "*Royal Purple.*"—A variety with large leaves and strong inflorescences, some of which bore six large flowers of vivid royal-purple colour, having lines of deep brown colour in the throat. Shown by Lord Aldenham, Elstree.

Sweet Pea, Henry Eckford.—A variety with flowers of salmon scarlet colour, being a distinct shade. Two, but sometimes three flowers are produced on a spike. Shown by Mr. H. Eckford, Wem.

Orchid Committee.

Present: J. Gurney Fowler, Esq., in the chair; and Messrs. Jas. O'Brien (Hon. Sec.), De B. Crawshay, W. H. Young, W. Boxall, H. J. Veitch, H. Little, A. A. McBean, T. W. Bond, G. F. Moore, H. T. Pitt, W. H. White, R. G. Thwaites, J. Charlesworth, J. Douglas, J. Colman, and R. B. White.

Awards.

First-class Certificate.

Sophro-Lælia × læta Orpetiana, from Captain G. L. Holford, C.I.E., Westonbirt.—A charming and floriferous variety which had already received an Award of Merit. Flowers bright magenta-crimson with yellow base to the lip. The three little plants shown had each two fine flowers.

Lælio-Cattleya × *King of Spain* (? L.-C. × Digbyano-Mossiæ × C. Warneri).—A grand flower in shape, size, and colour, excelling a good C. Warneri, the broad, fringed lip being a specially fine feature. Sepals and petals light rosy-lilac; front of lip bright crimson-purple, disc yellow with purple markings at the base.

Awards of Merit.

Odontonia × *Lairesseæ* (Miltonia Warscewiczii × Odontoglossum crispum).—A very remarkable hybrid raised by M. A. de Lairesse, Avenue de Comte, Sclessin lez Liège, Belgium. It closely follows Miltonia Warscewiczii, but is enlarged in all its parts. Flowers white, with the lower two-thirds of the segments tinted and blotched with rose, a similarly coloured marking being also in the labellum; crest yellow.

Cattleya Mendeli Pittiæ, from H. T. Pitt, Esq., Stamford Hill.—Sepals and petals nearly white, the lip having a clear rose marking on the front lobe. The two flowers on the spike were not alike, the one having the colouring more diffused than the other.

Epidendrum × *radico-vitellinum* (radicans × vitellinum), from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White).—A singular hybrid, with ascending leafy stems, similar to E. radicans, and heads of numerous orange-coloured flowers more nearly like those of E. vitellinum.

Epi-Lælia × *vitell-brosa* (E. vitellinum × Lælia tenebrosa), from Sir Trevor Lawrence, Bart.—A rather showy hybrid with erect spikes of many flowers each about two and a half inches across, and with the bronzy tint seen on L. tenebrosa. The whole flower strongly indicates the other parent, E. vitellinum.

Botanical Certificate.

Brassavola Perrini, from Sir Trevor Lawrence, Bart.—A fine old species with white fragrant flowers.

Cirrhopetalum guttatum, from Sir Trevor Lawrence, Bart.—A pretty species from the Himalaya allied to C. maculosum. Flowers cream colour spotted with purple.

Bulbophyllum radiatum, from Sir Trevor Lawrence, Bart.—Inflorescence slender, surmounted by several flowers with narrow white segments.

Epidendrum pterocarpum, from Sir Trevor Lawrence, Bart.—A small species with brownish sepals and petals and whitish lip, the expanded side lobes of which are striped with purple.

Cultural Commendation

To Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., for a fine specimen of Brassavola Perrini.

To Mr. H. G. Luckhurst, gr. to Sir John Edwards-Moss, Bart., Henley-on-Thames, for a large and finely-flowered Lycaste Deppei.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (Chairman), and Messrs. Jos. Cheal, W. Bates, S. Mortimer, A. Dean, E. Beckett, Geo. Kelf, H. J. Wright, G. Reynolds, F. Q. Lane, J. Jaques, J. McIndoe, G. Norman, Owen Thomas, A. H. Pearson, and H. Parr.

A collection of ten dishes of Apples in as many varieties was shown by the Government of Western Australia, as well as samples of various seeds and grains. The Apples were of such good appearance that the Committee recommended a Silver Knightian Medal.

Several seedling Melons were shown for certificate, but none was considered to be sufficiently good to warrant an award being made.

Mr. Ed. Beckett, Aldenham House Gardens, contributed a dish of British Queen Strawberries.

The Lecture.

The Rev. Professor Henslow delivered a lecture on "The Plants of the Bible," which he illustrated with a fine series of lantern-slides. He pointed out that about 120 plants were mentioned in the Bible, which could be grouped according to their use as Textile Materials; Medicinal, Edible, and other Herbs; Plants used in the Arts; Flowers; Odorous Resins, Spices, and Perfumes; Fruit, Timber, and other Trees; and Desert, Field, and Water Plants. Of the textile plants, Flax was used for lamp-wicks as well as for fine linen, but Cotton was only once mentioned in Holy Writ. The herbs included Mint, Rue, Dill, Cummin and Coriander, and bitter herbs, under which latter he quoted the description by Josephus of the method of extracting Mandragora, which, as well as being an imaginary charm against demons and a real medicine, was believed to shriek and drive anyone mad who tried to pull it up and who heard it shriek. A trench was therefore dug round the root, and a dog tied by the tail to the crown of the plant; then the dog would pull it up, but die in the effort.

Camphire, Madder, and Saffron were among the plants used in the arts. The lecturer pointed out that very few plants were mentioned in Scripture for the sake of their flowers only, and they were largely of the Lily or Rose tribe. Of esculent herbs, Lentils formed the substance of Jacob's pottage, and Beans, Gourds, and Garlic were used as vegetables. Egypt still grew the same varieties of Wheat as of old, and Barley, Rye, and Millet were also found mentioned. The odorous resins and perfumes were used principally for making incense and holy oil, including frankincense, myrrh, balm of Gilead, spikenard, and calamus. Among the fruit-trees the Vine, Pomegranate, Almond, Olive, Fig, and Apple were mentioned; and Cedars, Firs, Cypresses, Oaks, Poplars, Ebony, Box, and Myrtles were almost all the timber-trees referred to in the Bible. Most of the desert plants appeared to have been thorny or spinescent, and Nettles, Thistles, Tares, and Cockle were some of the field weeds. The water-plants included the Bulrush or Papyrus; this was the most important, and was not only used for making the first paper, but also for baskets and boats, including probably the ark of Moses.

YORKSHIRE GALA.

June 21, 22, 23.—The forty-seventh exhibition of the York Gala took place as usual in the Bootham Field, York, the weather at the opening being dull and threatening for rain, but in the afternoon there was bright sunshine. The large spacious tents were as usual well filled with a varied collection of plants, cut flowers, fruit and vegetables. These exhibits on the whole were generally considered to be above the usually high standard of the York shows. One of the judges remarked that he had been a regular exhibitor at York for forty-five years, and he considered this to be the finest exhibition (especially of hardy cut flowers) ever seen in that city. There was a large number of visitors during the afternoon.

Orchids

were above the usual average at this exhibition.

Messrs. Charlesworth & Co., Bradford, Yorks, had the only non-competitive trade exhibit, and made a very effective display. The plants were all well grown, and consisted principally of Cattleyas and Lælio-Cattleyas, among these being C. Mossiæ Reineckiana, C. Mendeli Princess Margaret (a pale, uniformly-coloured variety, and very distinct), several very fine varieties of L.-C. Fascinator, L.-C. Aphrodite, and L.-C. Canhamiana; L.-C. Phœbe (with beautiful, richly-coloured lip), Cattleya Fernand Denis (a fine distinct hybrid between C. gigas × C. Aclandiæ), Brasso-Cattleya purpurato-Digbyano (very fine), nice plants of Miltonia vexillaria, M. Roezlii alba, Cypripedium niveum, Tricopilea Galleottiana, &c. (Silver Floral Medal).

For a table of Orchids arranged for effect, Messrs. Cypher, of Cheltenham, won 1st prize, having an excellent exhibit, including such well-known species as Cymbidium Lowianum, Thunia Bensoniæ (a splendid dark variety), long arching spikes of Odontoglossum crispum, Oncidium varicosum, also Brassavola Digbyana, Phalænopsis Rimestadtiana, Miltonia vexillaria, Cattleya Mossiæ, richly-coloured Masdevallias, Epidendrums, &c. Mr. J. Robson, Bowden, Manchester, also set up an excellent group composed chiefly of fine spikes of Odontoglossum crispum, good varieties of Cattleya Mossiæ, and various Cypripediums.

For ten Orchids in bloom (distinct), Mr. Cypher was 1st with finely flowered plants of Epidendrum prismatocarpum Veitch's var. (the plant carried thirteen fine spikes), Miltonia vexillaria with about seventy flowers, Lælia grandis tenebrosa, Lælio-Cattleya Martinetti, Cattleya Lawrenceana with thirteen blooms, also a finely-grown plant of Cypripedium Curtisii, &c. W. P. Birkinshaw, Esq., West Hin, Hessle, was a very close 2nd, only one point, as judged, being the difference; he had excellent plants of Cattleya Mossiæ Wagnerii, with six fine flowers, C. Mendeli, C. gigas (very fine), Lælio-Cattleya Eudora alba, a large pan of C. Euryalis with about two dozen flowers, also a well-grown Cattleya Mossiæ with sixteen flowers.

For six Orchids in bloom Mr. Birkinshaw was 1st with well-flowered plants of Miltonia vexillaria, L.-C. Amelia, C. Mossiæ Reineckiana, C. M. Wagnerii, &c. Mr. Cypher was a close 2nd.

For three Orchids in bloom Mr. Birkinshaw was again 1st, also in class 26 for three new or rare specimen Orchids in bloom. These included L.-C. Martinettii nobilior. one of the richest-coloured varieties yet seen; this plant was deservedly awarded a First-class Certificate.

For six Orchids, single specimens, Mr. Birkenshaw was 1st, having L.-C. Roeblingiana, a beautiful hybrid between Lælia purpurata and Cattleya Gaskelliana, one of the finest Orchids in the show. The single specimen Orchid class brought seven competitors, the best being Oncidium spacelatum. 2nd, Dendrobium thyrsiflorum with thirteen spikes, only four being open. Had the others been fully developed this lovely specimen would undoubtedly have secured the 1st prize.

Pelargoniums.

The display of zonal Pelargoniums was very bright and attractive. The class for six plants, distinct (open), brought a keen competition, the 1st prize going to Mr. H. Pybus. His Lady Buchanan and Mrs. Newdigate were excellent examples of good culture. 2nd, G. Lee, Esq.

A class for four zonal varieties brought superbly-trained specimens over 5 feet across. Classes were also provided for six double-flowered zonal varieties and for three Ivy-leaved Pelargoniums.

Groups of Plants.

The groups of ornamental and miscellaneous plants, artistically arranged, were quite a feature of the show. Numerous were the visitors around these groups, and it was interesting to hear their remarks of admiration of the gardeners' skill in making such excellent floral displays. 1st prize was awarded to E. B. Faber, Esq., M.P. (gr. Mr. W. Townsend). This group was composed chiefly of Roses, Carnations, Liliums, Orchids, Crotons, Hydrangeas, Gloxinias, Coleus, Dracænas, these species being very cleverly intermixed with various Ferns and Asparagus. 2nd, Messrs. W. Artindale & Sons, High Street, Sheffield, who were very close competitors, the group being perhaps a trifle more heavily arranged than the former but in other respects it was equally good. The 3rd prize went to Jas. Blacker, Esq. (gr. Mr. Curtis).

Class 2 of miscellaneous groups was also well competed for. Mr. W. Vause, Leamington, was 1st, the beautifully arranged group consisted largely of Crotons (well coloured), white Liliums, Gloxinias, &c. 2nd, Messrs. R. Simpson & Sons. 3rd, Mr. G. Cottam.

Mr. Jas. Archer won 1st prize for hardy Ferns. These consisted of fine specimens of Lastrea grandiceps, Adiantum pedatum, Osmunda cristata, Polystichums, &c.

Hardy Cut Flowers.

These were equal to anything seen at the shows in the Temple Gardens, London. Messrs. Harkness & Sons sent a magnificent collection, which was greatly admired by everyone, their Pæony Faust, a new variety of a curious salmon-carmine colour, being very fine; also double Pyrethrum Mont Blanc, Papaver nudicaule (yellow), Hesperus matronalis purpurea plena and the variety alba, lovely Foxgloves, Pyrethrums, Gaillardias, numerous fine Iris, Liliums, &c., made a grand display. The 2nd prize collection came from Messrs. G. Gibson & Co., Bedale, and included Inula oculus Christi (very fine), Papaver Marie Studholme, the salmon-carmine Poppy. Double Pyrethrum Godiva had splendid blooms. Delphiniums, &c., made an excellent floral display. 3rd, J. D. Hutchinson, Esq.

Eighteen bunches of Pæonies: Messrs. Harkness & Son were 1st. There were several fine collections of Sweet Peas.

Mr. J. WOOD, Hardy Plant Nurseries, Boston Spa, had a pretty rockwork arrangement with a small pond of water in which were several aquatic plants in full growth. J. NICHOLSON, Esq., was 1st for alpine plants; and T. NICHOLSON, Esq., 2nd.

For twenty alpine and herbaceous plants, Mr. W. PYBUS was 1st with Lupins, Mimulus, Funkias, &c.—a very good exhibit. 2nd, S. HARDCASTLE, Esq., with Pyrethrum Mont Blanc, Campanula aggregata, Sedums &c.

STOVE AND GREENHOUSE PLANTS.

For nine stove or greenhouse plants (Orchids excluded) in bloom, Messrs. CYPHER were 1st, with splendid examples of Bougainvillea Cypherii, Stephanotis floribunda, Pimelia diosmæfolia, &c. Mr. WM. VAUSE was a good 2nd. Mr. CYPHER was 1st for six stove or greenhouse plants; Mr. VAUSE being 2nd. Mr. CYPHER was again 1st for three stove and greenhouse plants, showing excellent specimens of Erica Cavendishiana, Statice profusa, and Hedaroma tulipiferum; Mr. VAUSE 2nd; and Messrs. R. SIMPSON & SONS 3rd. Mr. CYPHER was 1st for six ornamental fine foliage or variegated plants. His examples of Phœnix rupicola, Croton mortefontainensis, Kentia Belmoreana and Kentia australis being of excellent culture. Messrs. CYPHER again were placed 1st for a single greenhouse plant in bloom, with a grandly-flowered specimen of Pimelia diosmæfolia. Mr. CYPHER was also 1st for a specimen stove plant with a beautiful specimen of Ixora Williamsii with about seventy fine heads of bloom (a noble plant).

For six stove and greenhouse plants, THOS. DIXON, Esq., was 1st, showing Bougainvillea Sanderiana (very fine).

For twelve bunches of cut flowers, Lady BATTYE WRIGHTSON was 1st with Anthurium Andrænum (very fine), Malmaison Carnations, Lælia purpurata, Odontoglossum crispum, Swainsonia albiflora, Stephanotis floribunda, &c. 2nd, Mrs. WHITEHEAD, who had fine examples of Vanda suavis, Cattleya Mossiæ, Lilium candidum, Verbena Miss Willmott, &c. 3rd, J. D. ELLIS, Esq., M.P.

The best collection of eight plants of tuberous Begonias came from Mr. F. STYAN, who had fine varieties and well-grown plants; 2nd, Mrs. LLOYD.

For eight Gloxinias Lady HAWKE was 1st; and Mr. JAS. SUNLEY, 2nd.

Calceolarias were well shown by W. TOWBRIDGE, Esq., and Mrs. RICHARDSON, who won 1st and 2nd prizes respectively.

For four Calceolarias W. TOWBRIDGE, Esq., was 1st; and Mr. F. DEAN, 2nd.

There were seven splendid groups of Carnations in competition, the Earl of HARRINGTON being placed 1st. 2nd, M. F. MUDDLETON, Esq., Highfield, Ripon. 3rd, Messrs. ARTINDALE & SONS. 4th, Mr. JOHN ROBSON.

FRUITS AND VEGETABLES.

Decorated Table of Ripe Fruit, not to include more than fourteen, nor fewer than ten dishes.—The 1st prize was won by the Earl of HARRINGTON (gr., Mr. Goodacre), who had a fine lot of fruit and flowers well set up, which was awarded 116 points. Black Hamburgh Grapes were good in form and colour. Other fruits were Melon Countess, a good Queen Pine, Early Rivers' Nectarine, Lady Sudeley Apple, and Royal George Peach. The decorative flowers used were Odontoglossum crispum, scarlet Schizanthus with long sprays of Selaginella. The Hon. E. L. WOOD, Temple Newsam, near Leeds (gr., Mr. Dawes), was 2nd with ninety-nine points. Peaches Abec and Gros Mignonne, and Nectarines Lord Napier were very fine here. 3rd, Mr. C. E. SIMPSON, York.

Collection of Ten Dishes.—The 1st prize was won by the Earl of HARRINGTON with a similar but not quite such a fine lot as before. 2nd, the Hon. E. L. WOOD.

Six Varieties.—The Earl of LONDESBOROUGH was 1st (gr., Mr. McPherson), his best dishes being Muscats and Black Hamburghs, and a fine seedling Melon. 2nd, Lady BEAUMONT, Carlton Towers (gr., Mr. Nichols), who had good Buckland Sweetwater and Black Hamburgh Grapes, with a good dish of Noble Strawberry, &c.

For Four Varieties (excluding Pines), Lord ST. OSWALD (gr., Mr. Easter) was 1st. Excellent Black Grapes were the leading feature. 2nd, Earl of HARRINGTON.

The best Pineapple was shown by the Hon. E. L. WOOD, the variety being Queen.

For three bunches of Black Grapes, which was a strong class, Lord HINDLIP, Hindlip Hall, Worcester (gr., Mr. Bayley), was 1st with a very fine trio, though many people thought that the 2nd prize lot was superior. 2nd, Mr. J. JOHNSON, Boston Spa, with a well-finished lot of Black Hamburghs.

For three bunches of White Grapes, which as shown were not quite up to average, the Lady BEAUMONT won 1st prize, having nice dishes of Buckland Sweetwater.

Peaches and Nectarines made a splendid show. The Marquis of NORTHAMPTON, Castle Ashby (gr., Mr. A. B. Searle), had the best exhibit of six Peaches in excellent fruits of the variety Hale's Early.

The best exhibit of six Nectarine fruits was shown by Col. HARRISON BROADLEY, Welton House, Brough, with a very exquisite dish of Lord Napier. 2nd, the Marquis of NORTHAMPTON; and 3rd, T. CORBETT, Esq., Impney, Droitwich (gr., Mr. Jordan), who had a grand dish of Early Rivers, which might have been placed higher.

There was a very fine lot of Melons. The Earl of LONDESBOROUGH had the best scarlet-fleshed variety; and Lord DERAMORE (gr., Mr. Goodall) was 2nd. For a green-fleshed fruit, Lord ST. OSWALD was 1st; and C. THELLUSSON, Esq. (gr., Mr. Chuck), 2nd. The Earl of LONDESBOROUGH had the best white-fleshed variety.

Figs were very good, the best coming from the Earl of FEVERSHAM (gr., Mr. Williams), who had a capital dish of the variety Brown Turkey.

The best Cherries were shown by W. A. H. BASS, Esq., Byrkley, Burton (gr., Mr. Nesbit), who had a good dish of Early Rivers.

Strawberries made an excellent show, the Earl of LONDESBOROUGH winning 1st prize; and Mr. J. HOLMES, Bootham, York, 2nd prize.

For Tomatos, F. A. SAMUELSON, Esq., Thirsk (gr., Mr. Brotherston), was 1st, having a fine dish of Best-of-All. 2nd, Mr. J. JOHNSON, with the variety Comet.

Among vegetables, the Earl of LATHOM won 1st prize in both classes, for which prizes were offered by Messrs. WEBB & SONS and Messrs. SUTTON & SONS. These were a very creditable show. 2nd prize in both classes went to Sir R. W. BULKELEY, Bart., Baron Hill, North Wales (gr., Mr. Bolton). The whole of the exhibits were very good. For Messrs. SUTTON'S prizes Lady BEAUMONT was 3rd.

NON-COMPETITIVE GROUPS.

It is usual in most large horticultural exhibitions nowadays for these to form the main portion of the show. This was particularly the case at York this year. The entrance tent was filled with exhibits of this class. Taking them as they appeared to the visitor, on each side were two nice exhibits mainly Japanese Acers and Euonymus put up artistically by Messrs. E. P. DIXON & SONS, of Hull. Next came Messrs. BACKHOUSE & SON with a large mixed group having a background of Palms fronted by Carnations, dwarf Roses, Cannas, &c. Following these was Messrs. WALSHAW'S well-arranged group; Miss Willmott Verbena and Lord Roberts Heliotrope stood out prominently. At the end was a group of Carnations put up by Mr. A. DUTTON, Iver, Bucks, the flowers being borne on long stems. Noticeable among these were Enchantress, Fair Maid and Harry Fenn. Messrs. KENT & BRYDON, Darlington, had a splendid group in which Rhododendrons, Lilium Harrisi, Lily of the Valley, and Skimmia japonica were the strong features.

Messrs. R. SMITH & CO., Worcester, had a large and very fine exhibit, mainly cut flowers of choice and showy herbaceous plants. On the centre table in this tent, Messrs. CUTBUSH & SONS, Highgate, put up a very fine exhibit. Dorothy Perkins Rose and a splendid lot of Carnations, both of "Malmaison" and perpetual-flowering varieties, were well arranged, and made a leading feature. At the further end was a small rockery on which were growing some of the choicer alpine plants. The background was formed of Eremuri in variety, Lilium Henryi, L. Orange Queen, to which must be added a fine collection of Nymphæas and other water and bog plants. Messrs. WEBB & SON, Wordsley, Staffordshire, had a magnificent show of Gloxinias and Sweet Peas.

Messrs. PEED & SONS, Norwood, put up a grand lot of Gloxinias. Messrs. R. H. BATH, Ltd., Wisbech, showed Pæonies, Iris, and other hardy flowers; and Messrs. CLIBRAN & SON, Altrincham, were well to the fore in exhibiting hardy flowers.

Messrs. BLACKMORE & LANGDON, Bath, created quite a sensation with their splendid double and single Begonias. Messrs. WOOD & SONS had a large exhibit of their well-known sundries. Mr. R. SYDENHAM had a table of Carnations arranged on his well-known rustic stands. Messrs. W. ARTINDALE & SONS, Sheffield, made a gay show with their Violas and Pansies. Messrs. W. & J. BROWN, Stamford, had a fine exhibit of zonal Pelargoniums, Verbenas, and Heliotropes.

Messrs. DOBBIE & CO., Rothesay, exhibited Sweet Peas and Violas, the Sweet Peas being grand. Messrs. DICKSONS, Chester, and Messrs. WALLACE & CO., Colchester, had a fine lot of Pæonies and other choice hardy flowers. Mr. PRINCE'S Oxford Roses were one of the best features in the show; Irish Anemones from Messrs. REAMSBOTTOM & CO., King's County, created much interest.

GOLD MEDALS

were awarded to Messrs. CUTBUSH & SONS, Highgate; Messrs. J. BACKHOUSE & SONS, York; Messrs. R. SMITH & SONS, Worcester; Messrs. WALLACE & CO., Colchester; Messrs. KENT & BRYDON, Darlington; E. P. DIXON & SONS, Hull, with a premier award to Messrs. CUTBUSH & SONS.

FIRST-CLASS CERTIFICATES

were awarded to G. YELD, Esq., Clifton Cottage, York, for Iris Neptune, I. Prospero, and Hemerocallis corona; also to Captain HOLFORD, C.I.E., Westonbirt, Gloucestershire (gr., Mr. Alexander), for Sophro-Lælia × læta Orpetiana; and to Mr. BIRKENSHAW, for Lælio-Cattleya Martinettii nobilior.

MARKETS.

COVENT GARDEN, June 21.

Cut Flowers, &c.: Average Wholesale Prices.

	s.d. s.d.
Anemones, per dozen bunches	2 0- 3 0
Bouvardia, per doz. bunches	6 0- 8 0
Calla æthiopica, p. doz. blooms	2 0- 3 0
— Elliottiana ...	12 0-18 0
Carnations, per doz. blooms, best American vars.	2 6- 5 0
— smaller do. ...	1 0- 2 0
— Malmaisons ...	8 0-12 0
Cattleya, per doz. blooms	10 0-12 0
Dendrobium Wardianum	1 0- 2 0
Eucharis grandiflora, per dozen blooms	3 0- 4 0
Gardenias, per dz. blooms	1 0- 1 6
Gladiolus Colvillei, per dz. bunches	4 0- 6 0
Gypsophila, per dozen bunches	2 0- 3 0
Iris, Spanish, per doz. bunches	3 0- 6 0
— best English grown, dozen	9 0-12 0
Lilac, per bunch.	0 9- 1 6
Lilium candidum	1 0- 1 6
— lancifolium, rubrum and album... ...	2 0- 3 0
— longiflorum...	2 0- 3 0
— tigrinum ...	1 6- 2 0
Lily of the Valley, per dozen bunches ...	12 0-18 0
Marguerites, white, doz. bunches	3 0- 4 0
— yellow, per dz. bunches ...	2 0- 3 0
Mignonette, doz. bunches ...	3 0- 5 0
Narcissus, double white, per doz. bunches	2 6- 3 0
Odontoglossum crispum, pr. dz. blooms	2 0- 2 6
Pæonies, per doz. bunches... ...	2 0- 4 0
Pelargoniums, p. doz. bnchs.	
— Show	4 0- 6 0
— Zonal, double scarlet ...	4 0- 8 0
— salmon & pink	4 0- 6 0
Poppies, Iceland, doz. bunches	1 6- 2 6
— Oriental, doz. bunches ...	6 0- 9 0
Pyrethrum, doz. bunches ...	2 0- 4 0
Rhodanthe, doz. bunches ...	2 0- 3 0
Roses, 12 blooms, Niphetos ...	1 0- 3 0
— Bridesmaid...	2 0- 4 0
— Kaiserin A. Victoria ...	2 0- 4 0
— General Jacqueminot ...	0 6- 1 0
— C. Mermet ...	2 0- 3 0
— Caroline Testout	2 0- 4 0
— Liberty ...	2 0- 4 0
— Mad. Chatenay	4 0- 6 0
— Mrs. J. Laing.	2 0- 6 0
— Sunrise ...	1 0- 2 0
Stephanotis, doz. trusses ...	1 6- 2 6
Sweet Peas, doz. bunches ...	3 0- 6 0
Tuberoses, per dozen blooms	0 3- 0 6

Foliage: Average Wholesale Prices.

	s.d. s.d.
Asparagus plumosus, long trails, each ...	0 6- 0 9
— — medium, each ...	0 4- 0 6
— — short sprays per bunch...	1 0- 2 6
— Sprengeri ...	0 9- 1 6
— tenuissimus..	9 0-12 0
Adiantum cuneatum, per dozen bunches... ...	4 0- 6 0
Cycas leaves, each	1 6- 2 0
Fern, English, p. dozen bunches	3 0- 4 0
Grasses, hardy, p. dozen bunches	2 0- 4 0
Ivy-leaves, bronze	1 6- 2 0
— long trails, per bundle ...	1 0- 2 0
— short green, doz. bunches	1 0- 1 6
Moss, per gross...	5 0- 6 0
Myrtle, per dozen bunches... ...	4 0- 6 0
Smilax, p. dozen trails	4 0- 6 0
Hardy foliage (various), per dozen bunches	3 0- 4 0

Vegetables: Average Wholesale Prices.

	s.d. s.d.
Artichokes, Globe, per dozen ...	2 6- 3 0
Asparagus, bunch	1 0- 8 0
— Giant	4 0- 8 0
— English giant	4 0- 8 0
— ordinary, per bunch... ...	1 0- 2 6
Beans, dwarf, per lb	0 6-0 10
— Channel Island	0 4- 0 9
— English, p. lb.	0 6-0 10
— Broad, p. pad	2 6- 3 0
Beetroot, bushel	1 6- 2 6
Cabbages, p. tally	2 6- 3 6
Carrots, new, doz. bunches ...	1 6- 2 0
— bag	6 0 —
Cauliflowers, doz.	2 0- 2 6
Cress, doz. pun.	1 0- 1 3
Cucumbers, doz.	1 9- 3 0
Endive, per doz.	1 6- 2 0
Greens, bushel ...	0 9- 1 0
Horseradish, per dozen bundles	8 0-10 0
Mint, per dozen...	1 6- 2 6
Leeks, per dozen bundles	2 6- 3 6
Lettuces, Cabbage, per dozen ...	0 4- 0 6
— English, Cos, per dozen ...	0 4- 0 6
Mushrooms (house) per lb.... ...	0 6-0 10
Onions, Egyptian, per cwt. ...	6 0 —
— Spring, dozen bunches ...	2 0- 4 6
Parsley, per doz. bunches... ...	1 0- 1 6
Peas, Frame, per lb.	0 6- 0 8
— Flats	2 0- 2 6
— English, bus.	3 6- 4 0
Potatos, per ton	60 0-90 0
— Frame, lb. ...	0 2-0 2½
— Teneriffe, cwt.	11 0-12 0
— Jersey, p. cwt.	13 0 —
— St. Malo, per cwt.	11 6-12 0
— Cherbourg, p. cwt.	9 6-10 0
Radishes, p. doz. bunches ...	0 8-0 10
Rhubarb, York, per dozen ...	0 9- 1 3
— Natural, doz.	1 6- 2 6
Spinach, bush. ..	1 0- 1 6
Tomatos, English, p. lb.	0 5- 0 6
— Jersey, p. lb.	0 4 0 5½
— Valencia, per case	10 0-12 0
Turnips, new, doz. bun.	3 0- 3 6
Vegetable Marrows	0 3- 0 4
Watercress, per doz. bunches.	0 4- 0 7

Fruit: Average Wholesale Prices.

	s.d. s.d.
Apples, Victorian and Tasmanian, per case	9 0-12 0
Apricots, French, per box ...	1 0- 1 6
— — per case ...	3 6- 4 0
Bananas, bunch	6 0-14 0
— loose, per doz.	1 0- 1 6
— Jamaica ...	3 6- 8 0
Cherries, per half bush.	4 3- 7 3
— per box ...	1 0- 3 0
Figs, per dozen...	2 0- 6 0
Gooseberries, per half bushel ...	2 0- 2 6
Grapes, Alicante, per lb. ...	1 0- 1 6
— Hambro, lb.	0 9- 2 6
— Muscats, p. lb.	1 0- 4 0
Lemons, per case	12 0-18 0
Mangos, per doz.	6 0-12 0
Melons, each ...	1 0- 2 6
Nectarines, A., p. dozen	10 0-15 0
— B., per dozen	2 0- 6 0
Oranges, per case	6 0-30 0
— Murcia, case	14 0-16 0
— Valencia, per case	13 0-28 0
Peaches, A., doz.	9 0-18 0
— B., per doz. ...	1 6- 5 0
— French, per box	1 0- 2 0
Pines, each ...	2 6- 4 6
Raspberries, p. lb.	4 0- 5 0
Strawberries, Southamptons, per basket ...	1 0- 2 6

Plants in Pots, &c.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, p. dozen	4 0- 9 0	Hydrangea, Thos. Hogg, p. doz.	8 0-12 0
Araucaria excelsa, per dozen ...	18 0-30 0	— Hortensia, p. dozen	8 0-12 0
Aspidistras, green, per doz. ...	24 0-36 0	— paniculata ...	12 0-30 0
— variegated, per doz. ...	30 0-42 0	Kalosanthes, doz.	9 0-12 0
Asparagus plumosus nanus, per doz. ...	9 0-12 0	Kentia Belmoreana, per doz...	12 0-18 0
— Sprengeri, per dozen	6 0- 9 0	— Fosteriana, p. doz.	12 0-21 0
— tenuissimus per doz. ...	6 0- 8 0	Lobelia, per. doz.	4 0- 5 0
Bedding plants, store boxes, each	1 0- 1 6	Latania borbonica, per doz. ...	12 0-18 0
Begonias, tuberous, per doz.	5 0- 8 0	Lilium Harrisi, per dozen ...	10 0-18 0
Boronia elatior, per dozen ...	12 0-24 0	Marguerites, white, per dozen ...	4 0- 8 0
Calceolarias, yellow, per dozen.	4 0- 6 0	— yellow, dozen	12 0-18 0
— herbaceous, per dozen ...	6 0- 8 0	Mignonette, doz.	4 0- 6 0
Cannas, per doz.	5 0- 6 0	Musk, Harrison's, per dozen ...	3 0- 4 0
Chrysanthemum coronarium, double yellow, per dozen ...	6 0- 8 0	Pansies, per box...	1 0- 2 6
Coleus, per dozen	2 6- 4 0	Pelargoniums, per doz., Show.	9 0-12 0
Crotons, per doz.	12 0-30 0	— Ivy-leaved ...	6 0- 8 0
Cocos Weddelliana, per doz. ...	12 0-30 0	— zonal	4 0- 6 0
Cyperus alternifolius, p. doz.	3 0- 5 0	— scarlet do. ...	4 0- 5 0
Dracænas, p. doz.	9 0-24 0	Petunias, double, per dozen ...	5 0- 6 0
Ericas, per doz....	12 0-30 0	Rhodanthe, per dozen	4 0- 5 0
Euonymus, per dozen	4 0- 9 0	Rhododendrons, per dozen ...	24 0-30 0
Ferns, in thumbs, per 100... ...	8 0-12 0	Roses, H.P.'s, per dozen	9 0-18 0
— in 48's, p. doz.	4 0-10 0	— Crimson Rambler (large), each	3 6- 7 6
Ferns, in 32's, doz.	10 0-18 0	Saxifraga pyramidalis, per doz.	12 0-15 0
Ficus elastica, p. doz.	9 0-12 0	Selaginella, doz.	3 0- 5 0
— repens, p. doz.	5 0- 8 0	Spiræa japonica, per doz. ...	4 0- 9 0
Fuchsias, p. doz.	4 0- 6 0	Stocks, Intermediate, per doz.	4 0- 6 0
Heliotropes, per dozen	4 0- 5 0	Verbena, Miss Willmott, per dozen	9 0-12 0
		— purple, p. doz.	8 0-12 0
		— scarlet, p. doz.	8 0-10 0

Remarks.—Southampton Strawberries are the predominant feature in the market, there are also large quantities of this fruit arriving from Kent. While the Strawberry season is at its height other fruits, such as Grapes, Oranges, and even Tomatos are neglected by buyers. The last consignment of Tasmanian Apples has arrived, and for such varieties as Sturmer Pippin and Stone Pippin there is keen competition. Red Currants are seen. These are packed in flat baskets with handles, and are sold at an average price of 5s. per basket. Trade on the whole is brisk, and for really good produce there is a ready market.

Potatos.

Dunbars, 80s. to 90s.; various, home-grown, 60s. to 90s. per ton; seed in variety.

COVENT GARDEN FLOWER MARKET.

The turn of the season is apparent in the market; in fact some growers have already finished with spring-flowering plants. Prices vary but little. Show Pelargoniums are very good in quality and fairly plentiful; among the Ivy-leaved varieties many are of indifferent quality; the same may be said of "zonals." Yellow Marguerites are more plentiful: white Marguerites are also abundant; some of these are drawn, and too tall for many purposes. The yellow Chrysanthemum segetum is also plentiful and good. Mignonette sells fairly well. Plants of Lobelia are well flowered, but there is not much demand. Calceolarias are not over plentiful, but sufficient are obtainable to meet the demand. Fuchsias are of very good quality, but the trade for these is slow, and large quantities are sold at closing time to hawkers at small prices. Rhodanthe is over-abundant. Hydrangea Hortensia with single heads of well-coloured flowers are still arriving. The variety Thos. Hogg is not extra good. H. paniculata grandiflora varies considerably in quality, in many plants the flowers are not well developed. Rambler Roses continue plentiful. The varieties Dorothy Perkins and Crimson Rambler are equally good. There are also some fairly good H.P.'s and other dwarf sorts. Tuberous Begonias do not sell well. Verbenas are plentiful, but the weather is too hot for them to last in condition. Some growers are now filling their stands with Ferns, but trade in these is not very brisk. Palms are selling slowly. There is a small demand for extra-large bright-coloured foliage plants. The best trade for small bedding plants is now over, although large quantities are still coming to the market. I find some growers still have a quantity for disposal.

Cut Flowers.

Many Roses cut from the open ground show the effects of the late bad weather. Best flowers are not plentiful. Good blooms of Mrs. J. Laing with long stems have realised as much as 6s. or 7s. per dozen. Carnations are plentiful, and best flowers sell for good prices. Lilium longiflorum continues plentiful, but other Liliums are not so abundant. Few good Callas are seen. Irises of various sorts are abundant; some very good Japanese varieties are obtainable. Best quality Lily of the Valley is not over-plentiful, but smaller spikes are abundant and cheap. Iceland Poppies are over-plentiful, and can be purchased in the streets. Herbaceous Pyrethrums and Pæonies are abundant. Sweet Peas are plentiful, but good prices are maintained for best quality flowers. Large supplies of Grasses and hardy foliage arrive, also Asparagus, Smilax, and other choice foliage. Hardy Fern-fronds are now good. *A.H., June* 21.

Obituary.

James Adams.—The death has occurred, at the early age of fifty-seven years, of Mr. James Adams, who for the past sixteen years has acted as general foreman in Regent's Park, and whose labours, especially in connection with flower-garden work, are so well known. He was a master of his craft, and previous to coming to Regent's Park served at Kensington Gardens, Hampton Court and Battersea Park. His death occurred on June 15, at the Lodge, Broad Walk, Regent's Park, and he was interred at Finchley Cemetery on the 21st inst. *A. D. W.*

ANSWERS TO CORRESPONDENTS.

◆

Begonias: *W. G.* It is bad practice to syringe the flowers, which do not absorb the water, but which are likely to be damaged by it.

Carnation: *L. E. A.* Your plants are attacked by the fungus Helminthosporium echinulatum. The pest vegetates between the membranes of the leaf and cannot be destroyed without injuring the leaves. Remove and destroy by burning all leaves that are affected, and burn even the plants themselves if their condition seems hopeless.

Figs: *C. E. L.* Without seeing specimens we surmise that the check has been due to the low temperatures at night.

Foxglove: *A. J. W. D.* and *R. W. Llewelyn.* Several of the terminal flowers have run together into a cup. It is not uncommon and has often been illustrated in our columns. It comes true from seed.

Galls on Twig: *A. T. Shaw.* The woody galls are the work of a species of Cecidomyia, but in the absence of the perfect insect it is impossible definitely to fix the species.

Gloxinias, &c.: *H. G. K.* The leaves are attacked with mites. Steep the leaves in Tobacco-water. The Vine leaves show lack of nourishment and vigour. Fumigate your house well.

Gold-fish: *W. J. S.* They can be purchased in Covent Garden Market from Mr. Robt. Green, whose address is The Bedford Conservatories and Aviary, Central Avenue, Covent Garden Market, London.

Lily of the Valley: *R. B.* The plants are attacked by a fungus (Botrytis) causing collar rot. The most certain means of arresting the disease would be to remove the scattered diseased patches and mix the soil with quick-lime. Remove as much of the surface soil as possible during the winter, and replace by fresh soil mixed with flowers-of-sulphur.

Magnolia: *H. B. W.* The leaves have been scorched when wet with dew.

Names of Plants: *F. E. G.* The specimen you send is a Fern, and the yellow portion is not made up of flowers in the true sense as you take them to be. It is Botrychium lunaria (Moonwort). The lower branch is the sterile portion, and the upper, with yellow, globular spore-cases, the fertile portion. With regard to the small thrips which infest the fronds of Pteris which you forward, some of the Pteris are much more liable to the attack of these insects than others; but in all cases their presence points to a too dry atmosphere in the house in which they are grown, or to some other unsuitable condition in their culture. Fumigation causes as much damage to Pteris as do the thrips, and immersion in weak insecticide is a better remedy. In bad cases the old fronds should all be cut off and burnt, and let the new come up.—*D. & Sons.* Astrantia major.—*R. H.* Rosa sinica Anemone.—*F. R. B.* Varieties of Azalea pontica.—*E. V. B.* Prunus Padus (Bird Cherry).—*E. F. G.* Sprekelia formosissima (Jacobæa Lily). It belongs to a section of Hippeastrum.—*Volvox.* 1, Oncidium sarcodes; 2, Odontoglossum Lindleyanum.—*R. G. H.* Barbarea vulgaris, a native plant.—*J. M. F.* Olearia stellulata.—*J. M.* Berberis Darwinii. *P. O. K.* The flowers are of seedling varieties of Pinks, which it is impossible to determine.—*H. R. T.* The Iris flowers arrived in poor condition, and it is impossible to verify them. They are possibly a batch of seedlings between I. germanica and I. olbiensis, or it is possible they may be from old strong plants, and the flowers only half of their natural size. It is impossible to affix names to them.—*J. S., County Tyrone.* 1, Tecoma jasminoides; 2, Trachelospermum (Rhynchospermum) jasminoides; 3, Jasminum undulatum; 4, Bignonia speciosa; 5, Aërides crispum; 6, Carpenteria californica.—*S. P.* 1, Cratægus tanacetifolia; 2, Scilla peruviana; 3, Casuarina species.—*H. M. G.* 1, Cotoneaster frigida; 2, C. Simonsi; 3, not recognised; 4, Ailanthus glandulosa; 5, Euonymus latifolius; 6, Pyrus Aria.—*R. W. R.* Lonicera Ledebourii.—*Tydia.* 1, Rhododendron ferrugineum, the alpine Rose of the Swiss mountains; 2, Xanthoxylum alatum. *A. J. A., Leeds.* 1 and 4 next week; 2, Sparmannia africana; 3, Prunus Padus.—*D. W.* 1, Veronica Teucrium; 2, Robinia Pseudoacacia; 3, Geranium pratense; 4, Clerodendron fœtidum; 5, Magnolia Lenné; 6, Cratægus coccinea.—*C. A. B.* Taxodium distichum; Magnolia cordata.—*R. H.* 1, Pyrus intermedia; 2, Ulmus campestris; 3, Symphoricarpus racemosus (Snowberry).—*W. G. G.* Phacelia grandiflora so far as we can tell from the bad specimen sent.—*W. S.* Oncidium pulvinatum.—*F. G.* Photinia serrulata.—*W. S.* Carex, next week; the other is Rumex crispus.—*Sir H. A. H.* 1, Aquilegia leptoceras var. chrysantha; 2, Anchusa italica; 3, Lilium Szovitzianum; 4, L. pomponium (yellow variety); 5, Celsia cretica; 6, Euphorbia Lathyris [Caper spurge]; 7, Dracocephalum grandiflorum.

Orchid-leaf: *T. H. S.* Next week. The Rose is affected with the Rose-rust [Phragmidium]. Spray with Bordeaux-mixture. See *Gardeners' Chronicle,* 1904, May 28, p. 352.

Pæonies: *Count F. L. C.* The disease is caused by a fungus [Botrytis]. You might try spraying with Bordeaux-mixture and the other means described in the *Gardeners' Chronicle,* August 13, 1898, p. 124, fig. 32.

Peach: *W. R. C.* Shot fungus. We are afraid it is too late to do anything now but burn the affected leaves and fruits. Try spraying with liver-of-sulphur, ½ oz. to a gallon of water.—*W. C.* Before deciding upon your Peach please let us know if it is large or small-flowered. This is important. Your packing is excellent, and the fruits arrived in good condition.

Pears: *A. C.* The fruits are attacked by the Pear-midge. See figure in *Gardeners' Chronicle,* May 20 of the present year, p. 315.

Phlox: *G. B.* We often see this peculiar growth, but are unable to assign a cause for the atrophy of the leaves. Perhaps it is due to the attacks of insects.

Raspberries: *A. Y.* The flowers are not "set," or fertilised—perhaps from the absence at the proper time of bees or other insects.

Tomatos: *W. B. R.* The fruits are affected by the "black spot" fungus. Remove all that are similarly affected and burn them.—*E. F. C.* Your plants appear to be affected with the "sleepy disease," due to the growth of a fungus in the interior of the plant. Turn out the soil and start afresh.

Worms in Soil: *Case Bros.* The sample of soil had completely dried up during transit, and the worms you refer to were dessicated, and we could find no trace of them, but from the description you give of the galled roots, it is highly probable that the disease is due to eel-worms (Tylenchus). If you will send us a fresh lot of soil, together with a sample of the infected roots, we will have them examined.

Communications Received.—C. T. D.—F. S. & Sons—H. J. C.—W. H. W.—G. K.—C. B.—Yost Typewriter Co., Ltd.—Agent-General for Western Australia—J. Gregory—Grigor Roy—J. S. Rubenstein (received too late)—W. B. Jameson—A. Fry—F. M.—E. M.—W. G. S.—W. H. Smith—G. Woodward—A. Perry—F. Garrett.

(*For Weather see p.* viii.)

①